App. F. IX-4

Previous References
C - V 30-35 (3-5)

1936-7
(C.V)

File No. 33-36
Serial Nos. 1-4

Letter References.

GENERAL AND REVENUE SECRETARIAT.

2-102

Serial Nos. four

Part B for Aug 37.

SUBJECT.

Administration Report of the Mysore Serum Institute for 1935-6

W 4355-55 & 18-1-37

To Dir of Agn
Comptroller
Govt
Senior
Surgeon

Reviews re — with some observations

WD-0418—GPB—22,500—29-8-36

G. R. S. APP. F. [illegible—1] 1936-37

GENERAL AND REVENUE SECRETARIAT.

(C.U)

NOTES.

File No. 33-36

FILE HEADING.

Administration Report of the Servis Institute

FROM The Director of Agriculture

No. Roc 500/36-37 Dated 24/11/36 Received
4c 157

Diary No. 2720 | Enclos. 1 | Spare copies — | Serial No.

BRIEF ABSTRACT OF LETTER

Submits, in triplicate, the report on the working of the Mysore Servis Institute for the year 1935-36 with his review thereon.

NOTES AND ORDERS.

Sent with a draft to the Superintendent Printing, for approval.

Sec C&G
2674

Issued
W
26.11.36

Serial 2 | D 35.84 | encl | dt 30-11-36 | To Treasurer Supt. Govt. Printing

forwards for being set in type

D 35.85 dt 30-11-36 Copy to Dir. of Agri.

NOTES—First Sheet

Administrative Report regarding Grain Supplies

File No. 33 of 1936 | General and Revenue Secretariat

Submd. The Draft Report covers 8 pages.
A draft proposal & very brief report is put up for consideration
Fair draft
by
17.12.36

Fair draft submd
for Cl
23/12

Gl Secy
by
22.12.36

Please retype for submn up
Sd
26/12
by
26.12.36

Resubmitted with a retyped draft.
for Cl
2/1/37

Gl Secy
by
2.1.37

For consideration
Sd
7/1/37.
by
5.1.37

Secretary)

Sd
7/1/37

Sd
7/1/37

Dewan)

Sd
8-1-37

Done typing
& Sd
8/1/37

by
8.1.37

Issue & Submit

GENERAL SECTT.
24 DEC. 1936
1517

TYPING SECTION
DEWAN'S OFFICE
8 JAN. 1937
No. 2409

TYPING SECTION
GENL & REV. SECTT.
29 DEC. 1936

GENERAL SECRETARIAT
4 JAN. 1937
37

OFFICE OF THE
SECOND MEMBER OF COUNCIL
5 JAN. 1937
No. 45 35

TYPING
GENL

Administration report of the Siruvani Institute

Z 178

(5

General and Revenue Secretariat

C.V File No. 33 of 1936. [App. F. III—2

DEWAN'S OFFICE
4 FEB. 1937
No. 3066

OFFICE OF SECOND MEMBER OF COUNCIL
- 1 FEB. 1937
NO. 5407

GENERAL SECRETARY
26 JAN. 1937
785

Serial No.				
3	D 4553-55	dy 18-1-37	To	Dir. of Agri Comptl Senior Surgeon

Records the administration report of the Siruvani Institute for 1935-36 with some observation.

Send with two drafts - F.N. & S.N - for approval

Sd CB.
Z 571

R l Secy 26.1.37
Rw
JO
Ag. 1.37

Secd member) F.N. signed by Member.
CB 3/2/37

Rw
3/2
Ag
3.2.37

Dewan)

NOTE—Contn. Sheet.

WD 0417--GPB—30,000—8-9-36

Final Note by the Second Member of Council.

Subject.—

Administration Report of the Mysore Serum Institute for the year 1935-36.

I submit herewith, for His Highness' gracious perusal, the administration report of the Mysore Serum Institute for the year 1935-36 with the Government review thereon.

MEMBER OF COUNCIL.

Bangalore,
3rd February 1937.

5

Submitted to His Highness.

I submit herewith a Final Note by the Second *Member of Council on the subject of* the Administration Report of the Mysore Serum Institute for the year 1935-36 with the Government review thereon, *for His Highness' gracious* ~~xxxxxxxx~~ perusal.

Mirza M. Ismail

Dewan.

Bangalore,

4th February 1937.

Record of Cases submitted for the Orders of His Highness the Maharaja.

Subject.

Administration Report of the Mysore Serum Institute for the year 1935-36 and Government review thereon.

C Secy Mi
8/2/37

291

MK
9.2.37

Order.

~~KRW~~
5/2/37

SUBJECT :— Administration Report of the Mysore Serum Institute for the year 1935-36 and Govt review thereon

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(*)

31. All urgent or confidential files returned with His Highness' orders may in the absence of instructions or indications to the contrary, be ordinarily circulated to the Members of Council for perusal after the issue of orders.

33. The Secretaries concerned should see that orders in the cases referred to above are issued at once and that the files are returned immediately after to the Chief Secretary for circulation to the Members.

34. In all other cases, the files will first be circulated to the Members of Council at Headquarters and then sent to the Secretariat concerned for the issue of orders.

Circulated to Members of Council for perusal of His Highness' orders ~~before/after issue of orders~~. (*Vide* Rules 31, 33 and 34 of the Subsidiary Rules for the conduct of business of Council in the Manual of Council Rules and Procedure.)

*

Chief Secretary to Government.

Through the Secretary to Government,

General Department.

FIRST MEMBER OF COUNCIL.

SECOND MEMBER OF COUNCIL.

Gen. Secy. with Compliments.

GEN. & REV. SECRETARIAT
13 FEB. 1937
DEVELOPMENT BRANCH

NOTE.—Contn. sheet.

WD 1170—GPB—1,000—24-12-36

Received with his demi official No. C.U. 33-36-1
Roc 5000/36-37 dt/ 24.11.36
HC 157

2720

GOVT. SECRETARIAT
25 NOV. 1936
DEVELOPMENT BRANCH

24th Novr. 6

GENERAL SECRETARY.
25 NOV. 1936

To

M. Venkatesa Iyengar, Esq., M.A.,
General Secretary to the Government
of Mysore, Bangalore.

I have the honour to submit herewith in triplicate the report on the working of the Mysore Serum Institute for the year 1935-36.

The main work of the Mysore Serum Institute during the year 1935-36 consisted of the preparation of several kinds of Sera and Vaccines required for controlling most of the important contagious diseases of live stock and poultry such as Rinderpest, Haemorrhagic Septicaemia, Blackquarter, Anthrax, Sheep-pox, Fowl Cholera etc. These biological products were prepared as usual in sufficiently large quantities to meet fully and promptly all the demands of not only the Mysore Civil Veterinary Department, but also of several other Indian States, viz., Hyderabad, Baroda, Pudukkottai, Cochin, Ramdrug, Ichalkaranji etc.

In addition to the production of Sera and Vaccines, several investigations and researches were also carried out in the Institute during the year, with a view to improve the efficacy of the biologicals that were already being issued for field use and also to prepare some more new products required for other diseases.

Although the primary object of this Institute is to prepare and supply the biologicals required for use within

our State only, yet it is gratifying to note that the demand for these products during the year under report from places outside the State was even more than that from the Mysore Civil Veterinary Department, in as much as ~~that~~ over 3,16,000 unit doses of Sera and Vaccines were supplied to places outside the State as against 2,52,000 unit doses issued to the Mysore Civil Veterinary Department.

Government were pleased to sanction in their orders No.D.1991-2 C.V.40-35-4 dated 14th February 1936 and No.D. 6980-81 C.V.40-35-15 dated 16th May 1936 the deputation of the Superintendent to visit some important Indian States and Biological Institutes in South as well as in North India, (including Colombo) with a view to acquaint himself with the epizootic diseases occurring in those States, the remedial measures adopted by them etc., and also to study the working of other Biological Institutes as compared with that of this Institute. As a result of his visit to those places and personal discussions with the Veterinary Officers concerned, some more States have enquired stating their requirements of Sera and Vaccines from our Institute. It is also proposed to start in this Institute the preparation of Rabies Vaccine (Veterinary) for prophylactic vaccination against Rabies rabies in animals on the lines adopted in the Eastern Institutes on the lines adopted in the at Coonoor, Colombo, etc.

Consequent on the appointment of Mr. P. Narayanaswami Naidu as Assistant Superintendent, Civil Veterinary Department (vide Government Notification No.D.4527-C.V.18-35-5 dated 27-1-1935) he was also provided in this Institute with additional laboratory equipment, separate accommodation and other facilities to carry on research work, besides the facilities already afforded to the Assistant Superintendent, Scientific Section, Civil Veterinary Department, for the investigation of Johne's disease among cattle in our State and for carrying

on the routine laboratory work of the Mysore Civil Veterinary Department.

Production and issue of Biological products.

As there was an increased demand for Haemorrhagic Septicaemia Vaccine both from within as well as from outside the State during the year under report, the same had to be prepared in larger quantities as compared with the previous year. Similarly the production of Sheep-pox vaccine was also very much more this year (viz., about 3½ times) than that in the preceding year. However, the production of Anti-Haemorrhagic Septicaemia Serum and Black quarter filtrate was very much reduced this year as there had been already on hand large stocks of the same as opening balance at the commencement of the year and also as there was practically no demand for the latter product from the Mysore Civil Veterinary Department. The production of Rinderpest Bull Virus and Rinderpest Goat Virus had also to be reduced considerably (viz., by about 80% and 45% respectively) as there was very little demand for them owing to further decline in the incidence of Rinderpest in our State. No Anti-Blackquarter Serum was required to be prepared during the year as there was a large stock of this Serum remaining on hand as opening balance and also as the demand for this product from within the State was very much less, viz., about 1/3 of what it was in the previous year. As there were 46,062 doses of Anti Anthrax Serum at the commencement of 1934-35, no more of this product was required to be prepared that year. But as the stock thereof had run short during the year under report, it was necessary to replenish the stock by preparing 26,360 doses of this Serum.

As regards the supplies made to the Mysore Civil Veterinary Department it is observed that there was an increased demand for Haemorrhagic Septicaemia Vaccine,

Sheep-pox Vaccine and Blackquarter Bacterin during the year, while there was a less demand for Anti-Haemorrhagic Septicaemia Serum as compared with the supplies of the previous year. As a result of the introduction of Blackquarter Bacterin in preference to Black-quarter Filtrate, in view of the former being found to be more efficacious than the latter, there was no demand for Blackquarter Filtrate during the year from within our State. There was a marked fall in the supply of goat Virus to the Mysore Civil Veterinary Department, as there was a further appreciable decline in the incidence of rinderpest in our State. Besides, even the few outbreaks of Rinderpest that occurred among cattle in some parts of our State were controlled by adopting "Goat Virus alone" inoculations in preference to Serum Simultaneous method and as such the demand for Anti-rinderpest serum and Bull Virus was almost negligible. But the demand for Anti-Fowl Cholera Serum and Fowl Cholera Vaccine was considerably on the increase this year in as much as ~~that~~ 925 doses of the former and 2,300 doses of the latter were supplied this year as against 456 doses and 600 doses respectively in the previous year.

As regards ~~the~~ supplies made to places outside the State, it is gratifying to note that the total quantity of the various biological products supplied during the year under report, was much more than that in the preceding year, and that indents were received for the first time during the year from some new places also. Further, some of the States which were already our customers have indented for some new products as well, for the first time during the year, in addition to getting increased quantities of other products which were being got in the previous years.

Further, from the Hyderabad State the demand for Anti-Haemorrhagic Septicaemia Serum, Anti-Blackquarter Serum and Haemorrhagic Septicaemia Vaccine was much more, while that

for Anti-Rinderpest Serum was a little less than that in the previous year. From the Baroda State there was a demand for 12,000 doses of Anti-Rinderpest Serum as against only 1,000 doses during last year, and besides, 1,400 doses of Anti-Haemorrhagic Septicaemia Serum were also indented for by that State for the first time during the year under report.

As a result of the introduction of Goat virus in Coorg, the demand from that place was over four times that in the previous year, and consequently there was a considerable fall in the supplies under Anti-Rinderpest Serum and Bovine Virus.

Experiments and Research.

Goat Adapted Virus:- Field tests with virulent Bovine Rinderpest virus to ascertain the further duration of immunity conferred by Goat Rinderpest Virus were conducted on the fourth batch of Amrit Mahal Cattle after an interval of 33½ months.

Tissue Vaccine:- Experiments with Goat Spleen Tissue Vaccine were conducted with and without the addition of chemicals in order to study the period of viability.

It may be mentioned here that as far as Mysore State is concerned, Goat Tissue Vaccine is more or less of more academic interest, as the ~~ready & reliable~~ product in the form of goat blood virus, prepared in this Institute is definitely known to keep potent for at least a week and it can be conveniently supplied to any part of the State within 24 hours to 48 hours.

Besides, in view of the fact that the tissue vaccine is required to be emulsified in normal saline prior to use on the field, it involves the possibility of the material

getting contaminated in the process of preparing the emulsion, as strict aseptic precautions cannot always be observed by the field workers with the limited facilities generally available there.

However, this vaccine has also been prepared on an experimental scale and may be made available for issue on a large scale if and when required.

Blackquarter:- Seven more pathogenic strains of Blackquarter were incorporated into the Bacterin prepared in the Institute with a view to make it more polyvalent.

Anthrax:- A sample of "Carbozoo" (Saponised Anthrax Spore Vaccine) was prepared, and experiments for the preparation of a live Spore Vaccine are in progress.

Goat-pox:- Experiments for preparing goat-pox vaccine were started this year and the results achieved so far are encouraging.

Fowl-pox:- Experiments for the preparation of Fowl-pox vaccine were continued with satisfactory results and the potency tests are in progress. The Fowl-pox Virus was passaged through pigeons and the material was collected for further work.

Rabies Vaccine (Veterinary):- It is proposed to start early in this Institute the preparation of this vaccine for prophylactic vaccination against rabies in animals.

Revenue and expenditure.

The total income derived by the sale of biologicals to places outside the State as well as to the Mysore Civil Veterinary Department and also by the sale of done animals, manure, etc., amounts to Rs.74,000/- during the year under report as against Rs.92,900/- in the previous year. The

reduction in the rate of Anti-rinderpest Serum from two annas to an anna and a half and the other concessions sanctioned in Government Order No.D.7363-4/C.V.82-34-4 dated 5-8-1935 affected the revenue of the Institute to a certain extent. The income from outside the State alone amounted to Rs.19,000/- as against Rs.42,600/- in the previous year. The decrease in revenue during the year under report is also due to the fall in income from the Mysore Civil Veterinary Department in as much as the total value of the products supplied for use within our State during the year works out to only Rs.39,200/- as against Rs.48,200/- in the previous year. This fall in revenue is chiefly due to the general decline in the outbreak of epizootics in our State.

As regards the expenditure, a sum of Rs.74,900/- has been expended during 1935-36 out of the budget grant of Rs.82,200/- as against the total expenditure of Rs.70,600/- in the previous year. The slight increase in the expenditure is due to the purchase of certain special and costly apparatus under 'Apparatus and Chemicals', during the year. It may be considered as almost a capital expenditure and was mainly on account of the additional laboratory facilities required to be provided in this Institute to Dr. P.M.Narayanaswami Naidu, Assistant Superintendent, Civil Veterinary Department.

General.

As usual, all the biological products prepared in this Institute together with some interesting and instructive demonstration photographs, charts, slides etc., were exhibited in the Dasara Exhibition held at Mysore during September and October 1935. Besides, the same were arranged to be exhibited in six other exhibitions as well.

Three professional papers were contributed by the

staff of this Institute during the year. Lectures on Veterinary subjects were arranged to be delivered to the Co-operative training class.

For the last three years 16 Veterinary graduates from different places underwent short course training in this Institute, including eight candidat s selected for training during the year under report.

The working of the Institute was on the whole quite satisfactory.

K. Chinthayya

Director of Agriculture.

kvs.

24/11/46

Annual report of the Mysore Serum Institute, Hebbal, Bangalore, for the year 1935-1936.

******

INTRODUCTION:- The main work of the Mysore Serum Institute during the year 1935-36 consisted of the preparation of several kinds of Sera & Vaccines required for controlling most of the important contagious diseases of live-stock and poultry such as, Rinderpest, Haemorrhagic Septicaemia, Blackquarter, Anthrax, Sheep-pox, Fowl Cholera etc. These biological products were prepared as usual, in sufficiently large quantities to meet fully and promptly all the demands of not only the Mysore Civil Veterinary Department, but also of several other Indian States, viz., Hyderabad, Baroda, Pudukkottai, Cochin, Ramdurg, Ichalkaranji etc.

In addition to the production of Sera & Vaccines, several investigations and researches were also carried out in the Institute during the year, with a view to improve the efficacy of the biologicals that were already being issued for field use and also to prepare some more new products required for other diseases.

Although the primary object of this Institute is to prepare and supply the biologicals required for use within our State only, yet it is gratifying to note that the demand for these products during the year under report from places outside the State was even more than that from the Mysore Civil Veterinary Department, in as much as that over 3,16,000

unit doses of Sera & Vaccines were supplied to places outside the State as against 2,52,000 unit doses issued to the Mysore Civil Veterinary Department.

An important feature during the year under report was that the Government were pleased to sanction in their orders No.D. 4991-2/C.V. 40-35-4 dated 14-2-36 and No. D. 6980-81/C.V. 40-35-15 dated 16-5-36, my deputation to visit some important Indian States and Biological Institutes in South as well as in North India, (including Colombo) as detailed in the margin with a view to acquaint myself with the epizootic diseases ~~of live-stock~~ occurring in those ~~parts~~ States, the remedial measures adopted by them etc., and also to note the working of other Biological Institutes as compared with that of this Institute. As a result of my visit to those places and my personal discussions with the Veterinary Officers concerned, some more States have begun getting their requirements of Sera & Vaccines from our Institute. Further I could introduce some refinements and improvements

South India:- From Bangalore to Coorg - Coonoor (Pasteur Institute and Nutrition Research Institute)- Cochin - Travancore - Pudukkottai - Colombo (Veterinary laboratory and the Dairy Farm)- Madras (The King Institute of Preventive Medicine, Veterinary College and its laboratories and the Serum Institute)- Bangalore (return).

North India:- From Bangalore to Hyderabad-Akkalkot Sangli-Kolhapur - Bombay (Royal Institute of Science, Haffkine Institute, Bacteriological Laboratory)- Bhavanagar - Baroda - Indore - Bhopal Gwalior - Jaipur - Jodhpur -Bikaner-Kasauli (Pasteur Institute) Muktesar (Imperial Institute of Veterinary Research laboratories) - Patna (Veterinary College and its laboratories and dairy farm) - Bangalore (return)

in the working of the Institute, in the light of what I had noted in other biological institutes I visited. It is also proposed to start in this Institute the preparation of Rabies Vaccine (Veterinary) for prophylactic vaccination against rabies in animals on the lines adopted in the Pasteur Institutes at Coonoor, Colombo, etc.

Consequent on the appointment of Dr. P.M. Narayanaswami Naidu, as Assistant Superintendent, Civil Veterinary Department, (vide Government notification No. D. 4527-C.V 18-35-5 dated 27-1-35) he was also provided in this Institute, as per orders of the Director of Agriculture, with additional laboratory equipment, separate accommodation and other facilities to carry on research work, besides the facilities already afforded to the Assistant Superintendent, Scientific Section, Civil Veterinary Department, for the investigation of Johne's disease among cattle in our State and for carrying on the routine laboratory work of the Mysore Civil Veterinary Department.

As regards the supplies made to the Mysore Civil Veterinary Department it will be observed that there was an increased demand for Haemorrhagic Septicaemia Vaccine, Sheep-pox Vaccine and Blackquarter Bacterin during the year, while there was a less demand for Haemorrhagic Septicaemia Serum as compared with the supplies of the previous year. As a result of the introduction of Blackquarter Bacterin in preference to Blackquarter Filtrate, in view of the former being found to be more efficacious than the latter, there was no demand for Blackquarter

Filtrate during the year from within our State. There was a marked fall in the supply of Goat Virus to the Mysore Civil Veterinary Department, as there was a further appreciable decline in the incidence of Rinderpest in our State. Besides, even the few outbreaks of Rinderpest that occured among the cattle in some parts of our State were controlled by adopting " Goat Virus alone" inoculations in preference to Serum Simultaneous method and as such the demand for Anti-Rinderpest Serum and Bull Virus was almost negligible. But the demand for Anti-Fowl Cholera Serum and Fowl Cholera Vaccine was considerably more this year in as much as that 925 doses of the former and 2,300 doses of the latter were supplied this year as against 456 doses and 600 doses respectively in the previous year.

As regards the supplies made to places outside the State, it is gratifying to note that the total quantity of the various biological products supplied during the year under report, was much more than that in the preceding year, and that indents were received for the first time during the year from some new places also viz., Ramdurg, Mr. Khanji Bai of Rajkot, Mr. K.R.S. Iyer of Bombay, Mr.K. R. Patel of Kalol etc. Further, some of the States which were already our customers have indented for some new products as well, for the first time during the year, as detailed in ~~the annexure No.~~ Appendix XV. in addition to getting increased quantities of other products which were being got in the previous years.

From the Hyderabad State the demand for Anti-Haemorrhagic Septicaemia Serum, Anti-Black-quarter Serum and Haemorrhagic Septicaemia Vaccine was much more, while that for Anti-Rinderpest Serum was a little less than that in the previous year. From the Baroda State there was a demand for 12,000 doses of Anti-Rinderpest Serum as against only 1000 doses during last year, and besides 1,400 doses of Anti-Haemorrhagic Septicaemia Serum were also indented for by that State for the first time during the year under report.

As a result of the introduction of Goat adapted virus in Coorg, the demand for goat virus from that place was over four times that in the previous year, and consequently there was a considerable fall in the supplies under Anti-Rinderpest Serum and Rinderpest Bovine Virus.

Thus it may be stated with confidence that the Sera & Vaccines of this Institute are gaining more and more popularity even in places outside the State. In spite of the considerable fall in the indents received from the Mysore Civil Veterinary Department and also the appreciable reduction in the rate of Anti-Rinderpest Serum from two annas to one and a half anna per dose with effect from 1-4-35 in order to keep it on par with the reduced rate obtaining in the Madras Serum Institute, it is gratifying to note that the working of the Institute, during the year under report from a financial point of view, was also satisfactory in as much as that there was a total revenue of Rs.74,900/- as against an expenditure of Rs.63,900/-

excluding that incurred to the extent of Rs. 11,000/- in purchasing special and costly apparatus and chemicals for providing additional laboratory facilities to Dr. P.M. Narayanaswami Naidu, Assistant Superintendent, Civil Veterinary Department, this unusually heavy investment being considered as almost a capital expenditure.

The following experiments were conducted in respect of the preparation of Biological products:-

Goat Adapted Virus :- Field tests with virulent Bovine Rinderpest Virus to ascertain the further duration of the immunity conferred by goat Rinderpest Virus were conducted on the 4th batch of Amrit Mahal Cattle after an interval of 33½ months.

Tissue Vaccine:- Experiments with Goat Spleen Tissue Vaccine were conducted with and without the addition of chemicals in order to study the period of viability.

Blackquarter:- Seven more pathogenic strains of Blackquarter were incorporated into the Bacterin prepared in the Institute with a view to make it more polyvalent.

Anthrax:- A sample of "Carbozoo" (saponised Anthrax Spore Vaccine) was prepared, and experiments for the preparation of a Live Spore Vaccine are in progress.

Goat-pox:- Experiments for preparing Goat-pox vaccine were started this year and the results achieved so far are encouraging.

Fowl-pox:- Experiments for the preparation of Fowl-pox Vaccine were continued with satisfactory results and the potency tests are in progress. The ~~fowl~~ fowl-pox Virus was passaged through pigeons and the material was collected for further work.

Rabies Vaccine (Veterinary):- It is proposed to start early in this Institute the preparation of this Vaccine for prophylactic Vaccination against rabies in animals.

As usual all the biological products prepared in this Institute together with some interesting and instructive demonstration photographs, charts, slides, etc., were exhibited in the Dasara Exhibition held at Mysore during September and October 1935. Besides the same were arranged to be exhibited in several other exhibitions as well, viz.,

1. Health Exhibition held at the Intermediate College, Bangalore.
2. The Indian Empire Exhibition held at Basavangudi.
3. The Central College Diamond Jubilee Exhibition.
4. Ghati Subramanyam Jatra.
5. Village Museum, Y.M.C.A., Dodballapur.
6. The Exhibition at Devanahalli.

Three professional papers were contributed by the staff of this Institute during the year. Lectures on Veterinary subjects were arranged to be delivered by Mr. G.N. Srikantiah, Veterinary Inspector, to the Cooperative training class, as the Superintendent, who had to deliver the lectures as per

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original programme, was away from head quarters on deputation.

II. ADMINISTRATION:- I was in charge of the Institute throughout the year under report excepting for short periods from 1-3-1936 to 29-3-1936 and 16-6-36 to 30-7-1936 (inclusive) when I was on deputation to visit some of the important States and Biological Institutes in India.

Mr. P.U. Nayar, continued to be the Bacteriological Assistant throughout the year and was also in charge of the Institute during my absence on deputation. He was on privilege leave for one month and 26 days from 8-7-1935 during which period the Senior Veterinary Inspector in the Institute was attending to the absentee's work in addition to his own.

As Mr. N.R. Srinivasa Iyengar, the Senior Veterinary Inspector in the Institute was promoted to the Gazetted rank and appointed as Assistant Superintendent, Mysore Lancers, he was relieved of his duties in this Institute on the afternoon of the 5th September 1935 and a Veterinary Inspector from the Mysore Civil Veterinary Department, was appointed in his vacancy.

III. STAFF:- The Staff of the Institute at the close of the year was as follows:

VETERINARY SECTION.

1) Six Veterinary Inspectors and Eleven Salustries.

OFFICE SECTION.

2) One Head-clerk, One Head-Accountant and Five clerks.

LABORATORY SECTION.

3) One Mechanic, Two Laboratory Attendants, One Media-man and One Serum Room Attendant.

PACKING SECTION.

4) One Carpenter and One packer.

MENIAL STAFF.

5) One Maistry, 63 Cattlemen, Five Peons, Two watchmen, and Six Thoties.

In this connection it may be stated that as the posts other than of Veterinary Inspectors carry only fixed pay in this office, affording practically no scope for any increase in their emoluments, proposals have been submitted to the Director of Agriculture for favour of converting them into time scale ones as in other offices, so as to avoid undue stagnation of the incumbents of this office and also to give them an impetus to work harder with continued zeal and with a feeling that their earnest work does not go unrecognised and unrewarded. It is beldeved that these proposals will be considered favourably.

IV. BUILDINGS:- The present thatched cattle sheds which are almost like temporary fixtures have been found to be very unsatisfactory in view of the fact that some of the roofings are occasionally blown off due to heavy winds and sometimes collapse on account

of heavy rains causing much anxiety to the staff and damage to the health of the animals and also necessitating heavy recurring expenditure towards repairs. It is therefore found very necessary to rebuild the cattle sheds on a permanent basis with Mangalore tiled roofing as has already been proposed and pressed for in the previous years. Although this is an urgent and important item of work, it has not been possible to be carried out so far, due to want of sufficient and specific funds. However it is hoped that this work will be taken on hand as early as possible.

Another important item of work deserving urgent consideration is the construction of Residential quarters to the Officers as well as to the staff of this Institute, particularly in view of the fact the the Institute is situated in an out of the way place, far away from the City. These proposals are already under the consideration of Government and it is believed that they will be viewed favourably.

V. CULTIVATION:- With a view to minimise the expenditure under "Feeding charges" and also to get fresh green fodder for feeding the animals of this Institute, some portions of the land belonging to the Institute were brought under cultivation as in the previous years, by employing the labour of this Institute alone, during their spare moments, without incurring any extra cost on this account. By so doing, it was

possible to grow during the year under report about forty-six tons of green jola, 5,022 lbs., of lucerne, 1,388 lbs., of radish, 680 lbs., of cabbage leaves and 1,022 lbs., of greens ~~leaves~~ etc., of the aggregate value of about Rs. 800/-

VI. ANIMALS:- All the animals required for production of Sera & Vaccines as well as for tests were purchased, as in previous years, from contractors on "Tender" system and the "done" animals were also disposed of, as and when available similarly.

The breeding of small experimental animals such as guineapigs, rabbits, etc., which had been undertaken as a measure of economy and convenience, was continued this year also with great success and out of these animals 65 rabbits and 73 guinea-pigs were used for different tests and experiments in this Institute inclusive of those supplied to Dr. P.N.Narayanaswami Naidu, Assistant Superintendent, Civil Veterinary Department.

The details of animals used during the year under report for production of several biologicals and for different tests and experiments are as follows:-

81 Fresh he-buffaloes for preparing ~~of~~ Anti Rinderpest Serum.

1 Fresh he-buffalo for preparing Anti Fowl Cholera Serum.

25 Discontinued rinderpest serum makers for the production of Anti-Haemorrhagic Septicaemia Serum.

25 Discontinued rinderpest Serum makers for preparing Anthrax Serum.

274 Fresh buffalo bull calves for preparing Rinderpest Virus as well as for conducting tests.

24 Bull calves solely for experiments.

350 Goats for preparing "Goat Virus" and for conducting experiments.

46 Sheep for preparing "Sheep-pox Vaccine" and for experiments.

193 Birds and 138 Laboratory animals for different tests and experiments.

During the year under report there were only three deaths among the serum producers as against twenty-three in the previous year.

VII. PRODUCTION & ISSUE OF BIOLOGICAL PRODUCTS.

Rinderpest Bovine Virus:- As a result of the introduction of "Goat Virus" inoculation in our State in place of Sero-Virus simultaneous method for protection of cattle against Rinderpest there was practically no demand for Rinderpest Bovine Virus from the Mysore Civil Veterinary Department during the year under report. Besides, for the same reason the demand for this product from Coorg was also comparatively very much less this year and the production of this Virus had also therefore to be very much reduced (viz., by about 80%) as compared with that of the previous year.

Irrespective of the demand for this Virus some animals had however to be inoculated at intervals merely for maintaining the strain of Virus in the Institute.

Thus as against 402 buffalo bull calves used and 64,400 doses of virus produced during the

previous year, (One c.c. being the unit dose) only 148 calves were used and 10,575 doses were produced during the year under report. Out of 148 buffalo bull calves used, 49 calves were rejected as non-reactors (i.e., as not showing typical symptoms of the disease in time) as against 45 calves rejected last year for the same reason.

During the year under report 325 doses of this virus were supplied to Coorg and 75 doses to the Mysore Civil Veterinary Department, Besides 150 doses were supplied to Ramdurg for the first time during the year, and 75 doses were used in the Institute for experimental purposes.

Rinderpest Goat Adapted Fixed Virus:-

During the year under report, 330 he-goats were used and 14,835 c.c. of virus were produced as against 367 he-goats and 26,820 c.c. of virus during the previous year. Owing to an appreciable further decline in the incidence of rinderpest in our State, the demand for this virus from the Mysore Civil Veterinary Department was considerably less, and as such only 1470 c.c. were supplied this year as against 5,070 c.c. in the last year. But the indents received from outside the State were however on the increase. As against only 210 c.c. of Goat Virus supplied to Coorg in the preceding year, 930 c.c were supplied this year; and for the first time during the year under report, indents were received from Ramdurg and Baroda for 225 c.c. and 30 c.c. respectively.

Anti Rinderpest Serum:- Since the efficacy of goat adapted virus as a single vaccine

for effective control of Rinderpest, has been well established, and also inview of the fact that goat virus alone inoculations are much cheaper and less cumbersome than Serum Simultaneous method of inoculations, the Mysore Civil Veterinary Department, have abandoned the latter method completely and have adopted the "Goat Virus alone" method in cases of all outbreaks of rinderpest. Consequently there was very little demand for Anti Rinderpest serum from within the State. However the demand for the same from places outside the State continued to be nearly as large as in the preceding year. While the total indents received from within the State were only for 6,500 doses, the same from places outside the State were for 1,90,000 doses as against 6,350 doses and 2,03,000 doses respectively during last year. Thus it may be stated that Anti-Rinderpest Serum is now being prepared in this Institute mostly in order to meet the demands from outside the State alone, although this Institute was started with the main object of preparing this serum only in addition to bull virus required for use in our State for carrying on Serum Simultaneous inoculations. However the present fall in the demand for Anti Rinderpest Serum from within the State is due to the fact that rinderpest has been almost eradicated from our State by the effective methods of control and the few outbreaks that may occur in any parts of our State can be combated successfully by adopting the latest "Goat Virus alone" method.

During the year under report, 81 he-buffaloes were used and 1,69,700 doses of Anti Rinderpest

Serum were prepared (5 c.c. being the unit dose as against 115 he-buffaloes and 1,50,450 doses in the previous year. As there were already 81,800 doses of this serum on hand at the commencement of the year, there were altogether 2,51,500 doses available for issue. Out of this, 1,65,000 doses were supplied to Hyderabad, and 5,000 doses to Coorg as against 1,90,000 doses and 12,000 doses respectively during last year, the fall in demand from Coorg being due to the introduction of Goat Virus in that Province as well. But 12,000 doses were supplied to Baroda this year as against only 1,600 doses in the previous year. Besides, indents were received for the first time during the year for 3,300 doses of Anti-Rinderpest Serum from Ramdurg State and for 4,500 doses from Mr. K.R.S. Iyer of Bombay. Indent for 100 doses from Kalal (North Gujerat) and another for a similar quantity from Rajkot were also received for the first time this year.

Anti Haemorrhagic Septicaemia Serum:-

As there was a large stock (viz., 1,02,520 doses) of this serum on hand at the commencement of the year, only 25 discontinued rinderpest serum makers were used and 23,900 doses of this serum were prepared (15 c.c. being the unit dose) as against 99 serum makers used and 1, 20, 920 doses prepared in the preceding year. As a result of conducting timely preventive inoculations with Haemorrhagic Septicaemia Vaccine which was used on a much larger scale there was a decrease in the demand for the Serum from the Mysore Civil Veterinary Department,

and as such only 18,720 doses of this serum were issued during the year for use within the State as against 24,760 doses supplied during the preceding year. But the demand for this serum from outside the State was more than that in the previous year by about 50 per cent. To Hyderabad alone, 53,000 doses were supplied this year as against 39,000 doses last year. From Cochin also indents were received this year for 1,940 doses as against only 800 doses in the previous year. Besides 1,400 doses were supplied to Baroda, 100 doses to Pudukkottai, 320 doses to Mr. K.R.S. Iyer of Bombay, and 300 doses to the Civil & Military Station, Bangalore, for the first time during the year.

Anti Blackquarter Serum:- No Anti-Blackquarter serum was required to be prepared during the year under report, as there was a large stock of the same (viz., 68,340 doses) remaining on hand as opening balance out of the quantity prepared towards the end of the previous year, and also as the demand for this product from within the State was very much less owing to ~~the~~ an extensive use of Blackquarter Bacterin as a prophylactic. Only 5,280 doses were indented for this year by the Mysore Civil Veterinary Department as against 15,000 doses in the preceding year (15 c.c. being the unit dose). But the demand from places outside the State rose to 13,040 doses from 8,720 doses only in the previous year. 12,000 doses were supplied to Hyderabad, 960 doses to Pudukkottai and 80 doses to Ichalkaranji as against 8,000 doses

600 doses and 120 doses respectively in the last year.

Anti Anthrax Serum (Bovine):- As there was a large stock of this serum remaining on hand at the commencement of 1934-35 out of the previous year's production, there was no need to prepare any more of this serum that year, (i.e. 1934-35). But as the stock of the same ran short gradually and as the demand therefor during the year under report happened to be even slightly greater than that in the previous year, it was found necessary to replenish the stock during the year. Hence by making use of 25 he-buffaloes, discontinued from rinderpest serum production, 26,360 doses of Anti-Anthrax Serum were prepared (15 c.c. being the unit dose) and added on to the stock of 23,000 doses remaining on hand at the beginning of the year. Out of the total stock of 49,360 doses of this serum 23,660 doses were supplied to the Mysore Civil Veterinary Department, 1,000 doses to Hyderabad and 20 doses to Cochin as against 20,560 doses 2,000 doses and 400 doses supplied respec ively, in the previous year.

Anti Fowl Cholera Serum:- One discontinued rinderpest serum maker was immunised for the preparation of Anti Fowl Cholera Serum and 2,050 doses (3 c.c. being the unit dose) were prepared during the year under report. As this product is proposed to be still tested on the field on an extensive scale, it is being supplied free of cost to the Mysore Civil Veterinary

Department as well as to places outside the State for trial on the field. Accordingly 800 doses were issued to places within the State as against 450 doses in the previous year. Coorg and Cochin were supplied with 50 doses each and Ceylon with 25 doses for the first time during the year. The reports received so far are very encouraging.

Vaccines.

Haemorrhagic Septicaemia Vaccine:-

As the demand for Haemorrhagic Septicaemia Vaccine from within as well as from outside the State had further increased it had to be prepared in much larger quantities and consequently 1,03,100 doses (5 c.c. being the unit dose) of the vaccine were prepared during the year as against 83,300 doses last year. Thus there was a total quantity of 1,15,700 doses of this Vaccine available for issue during the year under report including the balance of 12,600 doses remaining at the commencement of the year. The Mysore Civil Veterinary Department indented for 62,950 doses of this Vaccine as against 44,450 doses in the preceding year. There was a demand for 39,000 doses from Hyderabad and for 6,000 doses from Baroda, as against only 25,000 doses and 5,500 doses respectively in the previous year. To Pudukkottai, one hundred doses of the vaccine were supplied this year for the first time and 200 doses were used in the Institute for the tests and experimental purposes.

Blackquarter Bacterin:- This is another product for which the demand had increased

considerably. During the year under report, 73,900 doses of Blackquarter Bacterin were prepared as against 82,650 doses in the last year. As there was already on hand a stock of 29,250 doses in the beginning of the year, a total quantity of 1,03,150 doses were available for issue during the year under report. Although this Bacterin was introduced only in the latter part of 1933-34 for ~~the~~ field use on an extensive scale, yet it has been found to be so efficacious that it has completely replaced Blackquarter Filtrate in our state and the demand for Blackquarter Bacterin during the year from the Mysore Civil Veterinary Department rose upto 83,600 doses as against 56,800 doses in the previous year, and only 1,200 doses in the preceding year. Pudukkottai also indented for 600 doses as against only 100 doses in the last year.

Blackquarter Filtrate:- As Blackquarter Bacterin was definitely proved to have a better antigenic value than filtrate as already stated above, the former alone was used in our State in preference to the latter, and as such there was little demand for filtrate from the Mysore Civil Veterinary Department during the year under report. Consequently it was not found necessary to prepare large quantities of this product as in previous years. Besides, as there were already 6,800 doses of Filtrate remaining on hand as opening balance, only 10,400 doses were prepared during the year so as to have a stock just sufficient to meet the possible demands from places outside the state only. 7,000 doses

of this product were supplied to Hyderabad and 350 doses to Pudukkottai as against 7,000 and 400 doses respectively during the previous year.

Sheep-pox Vaccine:- In order to meet the increased demand for this product from the Mysore Civil Veterinary Department, its output had to be further increased this year and as such 25 sheep were used and 48, 673 doses (one c.c being equal to 100 doses) were prepared as against 13,998 doses in the previous year. The Mysore Civil Veterinary Department, was supplied with 49,350 doses and Pudukkottai with 400 doses of the vaccine as against 12, 100 doses and 800 doses respectively in the preceding year.

Fowl Cholera Vaccine:- This being a new product prepared in this Institute it is supplied free of cost for extensive trial on the field and the demand for this product is also on the increase both from within and outside the State. Hence 6,200 doses of this vaccine were prepared and 1,960 doses were supplied to several places within the State as against 3,200 doses prepared and 600 doses supplied during the previous year. Indents were received from Coorg and Cochin also for 550 and 50 doses respectively for the first time during the year under report.

VIII. EXPERIMENTS & RESEARCH.

Routine Bacteriology & Pathology:- As in previous years, the routine bacteriological work consisted of the examination of various smears, conducting of sterility tests of bovine and goat adapted rinderpest virus, sera and vaccines, and

determination and exaltation of virulence of strains of Blackquarter, Haemorrhagic Septicaemia, Anthrax, Fowl Cholera, etc., in addition to the usual maintenance of stock cultures and preparation of various antigens for purposes of immunisation and tests.

During the year under report, 375 samples of rinderpest virus, both bovine and goat adapted, 104 samples of sera and vaccines and 169 samples of materials of a miscellaneous nature were subjected to cultural tests, both aerobic and anaerobic. Besides, pH estimation of eight samples of sera and 137 samples of culture media were also done.

Details of smears examined.

Anthrax	...	39
Blackquarter	...	251
Pasteurellae	...	579
Protozoa	...	419
Miscellaneous	...	490
Total	...	1,778

Pathology:- Routine work in Pathology was mainly confined to systematic post mortem examination of all animals and birds that died in the Institute as a result of tests, experiments and otherwise. A few more specimens of pathological interest and also some more helminths were collected and added on to the museum of the Institute during the year.

Details of post mortem examinations.

In all 510 autopsies were conducted

during the year as against 693 in the preceding year.

Kind of animals.		Number examined.
Buffaloes	...	9
Buffalo bull calves	...	137
Bull calves	...	100
Goats	...	11
Sheep	...	4
Bullock	...	1
Small animals (Rabbits, Guineapigs, white rats &c.)	...	124
Poultry	...	124
	Total	510

Out of the 510 post mortem examinations conducted, as detailed above, 99 were diagnosed for Rinderpest, 24 for Haemorrhagic Septicaemia, 51 for Blackquarter, 12 for Anthrax, and 32 for Fowl Cholera. The other 292 deaths were attributable to diseases other than those mentioned above.

Rinderpest.

Bovine Virus:- The strain of Bovine Virus maintained in the Institute was kept up by passaging through buffalo calves, and it was subjected to 69 passages during the year. 144 buffalo bull calves were used for the purpose out of which 94 calves reacted satisfactorily with a mortality of 65 per cent.

Goat Virus:- Two strains of fixed virus (Institute and Muktesar) were being maintained until recently; but as there was practically no difference between the two in their behaviours

and virulence, or antigenic value, and as it was unnecessarily involving double the number of goats for maintaining the strains seperately, both of them were mixed up into one. This mixed virus was subjected to 13 passages by the end of the year and it is found to give satisfactory results. The strains of the institute and the muktesar had been passaged 86 and 87 times respectively during the year before mixing them up, the total number of passages the strains had been subjected to from the beginning xf being 278 and 320 respectively.

Two tests on bovines for antigenic value were conducted in the institute with the virus twice during the year, the first being with the two strains, ~~with~~ seperately and the second with the mixed strain, with similar and quite satisfactory results.

330 goats were used for the production and for the maintenance of the strain of virus during the year, and 70% of the reacted satisfactorily with a mortality of 34 per cent.

Field Experiments with Goat Virus:- A fourth batch of 28 head of cattle out of 213 belonging to Amrit Mahal herd No. 3, which had been protected against rinderpest when they were of age ranging from 1 to 5 years with goat virus alone during February 1933, were tested with virulent bovine virus at Bidur during December 1935, i.e., after an interval of two years 9½ months. The period of daily observation for 10 days was uneventful excepting that one animal (1932 born) showed a slight rise in temperature, i.e. 103° F. and 103.4° F only on the 7th and 8th day

respectively but which later subsided. On examining the blood smears of the animal they failed to show any protozoan affection. Three bull calves were kept as controls at the scene of the experiment at Birur. Two of them took the infection in a severe form showing all the typical symptoms of rinderpest. But the third one had only a mild reaction and recovered.

In the light of the tests so far conducted it is thus seen that goat virus as a single vaccine confers an immunity on bovines, solid enough to withstand a test, with virulent bovine virus upto 33½ months. Another batch from the herd will be taken up in due course for inoculation with virulent bovine virus to ascertain the further duration of immunity by Goat Blood Virus.

Tissue Vaccine:- During 1933-34 some experiments were conducted with spleen tissue vaccine, prepared out of spleen exterpated at the height of reaction from goats infected with rinderpest. Two samples were prepared, one with phenol as a preservative and the other with formalin. The phenolised vaccine, preserved in cold storage up to 34 days conferred a solid immunity while the formalinised one proved a failure. Therefore, in continuation of the above, a few furt er experiments were conducted during the year. Different samples of vaccine with glycerine, chloroform and formalin as preservatives and were spleen tissue 1% in 0.5% saline were used for the experiments. The glycerinised vaccine and the spleen tissue alone in 0.5% saline gave fairly satisfactory results. Though the latter method is supposed

to be the method of choice of the day advocated by many workers in India, some more experiments are considered necessary on different aspects, particularly in respect of the solidity and longevity of immunity conferred by this product, before the vaccine is issued for field use on a large scale.

However, it may be mentioned here, that as far as Mysore State is concerned, goat tissue vaccine is more or less of mere academic interest, as the ready reliable product in the form of goat blood virus, prepared in this institute, is definitely known to keep potent for at least a week and as it can be conveniently supplied to any part of the state within 24 to 48 hours. Further as the incidence of rinderpest has considerably declined in our state and as the blood virus drawn out of the goats used for the mere maintenance of the fixed strain of the virus alone, is enough to meet the present demands from the Mysore Civil Veterinary Department, it is found neither desirable nor necessary nor profitable-at any rate at present - to prepare goat tissue vaccine in this institute by infecting some more goats with fixed goat blood virus and killing them at the height of reaction in order to get their spleens for making this product. Besides, in view of the fact that the tissue vaccine is required to be emulsified in normal saline prior to use on the field, it involves the possibility of the material getting contaminated in the process of preparing the emulsion, as strict aseptic precautions cannot always be observed by the field workers with the limited facilities generally available there.

In these circumstances it may be said that it is advantageous to adopt for the present, goat blood virus method alone in our State in preference to the goat tissue vaccine.

However, spleen tissue vaccine has also been prepared in this Institute on an experimental scale and may be made available for issue on a large scale if and when required.

Anthrax:- Experiments in connection with Anthrax were confined to testing of the Pathogenicity of the different strains, and testing and standardisation of samples of spore vaccine. Three virulent and two avirulent strains of Anthrax were maintained. During the year under report, another avirulent strain evolved from Australian spore Vaccine was added on to the stock cultures. One brew of Anti Anthrax Serum was prepared from bovines and tested for potency on sheep. Thirty c.c and fifty c.c. of this serum were given to a group of three animals with one m.l.d(.0000000001 c.c.) of virulent culture to each and two controls were kept. Both the controls died of anthrax while all the test animals withstood the infection.

Four tests were Conducted with the spore vaccine on guineapigs, rabbits and sheep, but as the results, though encouraging, were not uniform, some more tests have to be done before it can be issued for general field use.

A sample of saponised Anthrax Vaccine (Carbozoo) has also been prepared and it is to be tested.

Haemorrhagic septicaemia:- Four strains of Haemorrhagic septicaemia culture (local, Madras, Muktesar, and National Collection of Type Cultures, Lister Institute, London) were maintained by sub-culturing an ' by periodical passages through bovines. 0.1 c.c. and0.01 c.c. of broth culture proved fatal to buffalo calves and rabbits respectively.

Seven brews of Haemorrhagic Septicaemia Vaccine were prepared during the year and tested on buffalo calves and rabbits with good results.

Fowl Cholera:- Four strains of pasteurella avisepticus, both local and foreign were maintained. On testing all the strains for pathogenicity on fowls and pigeons, the foreign one (National Collection of Type Cultures, Lister Institute, London) was found to be most virulent and0.001 c.c. and0.02 c.c. of this proved fatal to fowls and pigeons respectively.

Five brews of Fowl Cholera Vaccine incorporating all the four strains, were prepared and tested for safety and potency with good results. Field tests with the vaccine are also reported to be encouraging.

One brew of Anti-Fowl Cholera serum was also prepared during the year. and it is being issued for field use.

Blackquarter:- There were 72 different samples of blackquarter at the beginning of the year and 8 more were received this year - six from the Veterinary Inspectors of the State, one from South Africa and the other from Germany. On testing

these 8 new strains, all of them excepting one received from the Veterinary Inspectors of the State, were found quite virulent for animals; and they were added on to the collection, making a total of 79 samples, for use in the preparation of Bacterin.

For ascertaining the minimum lethal dose (M.L.D.) of Blackquarter for potency tests a strain of Blackquarter received from the Madras Veterinary College was used on bovines and guineapigs and it has been found that 1.5 c.c. of the culture kills the former and 0.003 c.c. the latter.

Tests for virulence of stock cultures:- Half a dozen strains of different cultures of Blackquarter including strains received from South Africa, Lister Institute, London and Germany were tested for virulence on bovines, sheep and guineapigs, and all of them were found virulent enough to produce typical blackquarter with a high percentage of mortality.

Blackquarter Bacterin (Vaccine):- Seven brews of blackquarter Bacterin (Vaccine) incorporating both foreign and local strains, were prepared during the year, and they were tested for safety and potency on bovines and guineapigs.

The seasonal recurrence of Blackquarter in the Cattle Breeding Station, Ajjampur, was completely checked by the systematic biannual inoculation of the young stock with the Bacterin. In all 375 young animals of the Cattle Breeding Station were inoculated with the Bacterin during the year under report.

Sheep-pox:- The strain of sheep-pox virus maintained in the Institute was subjected to 16 passages from 1931-32 up to the end of the year under report and it continued to be virulent. Some material from a case of natural outbreak of sheep-pox was collected from Yodballapur area during the year and a batch of three sheep was infected. The "Takes" were quite good in all the three animals and the material scraped from them was made use of for the preparation of vaccine. Out of 31 sheep used during the year for the preparation of the vaccine 84% of them developed satisfactory "takes" and yeilded a sufficient quantity of material.

Viability of pox virus:- It had been observed during the last year that the material preserved in 1:3 glycerine and kept in the cold storage for 7 months and 11 days had been found to be virulent on test. Another experiment in this connection was undertaken during the year under report with a sample of material collected from a case of natural attack of pox in the Institute, and preserved in 1:3 glycerine in the cold storage for a period of 11 months. Three sheep were used for testing the material and all of them took the infection only in a mild form resembling the reaction after vaccination, indicating thereby that the virus had undergone some attenuation.

Goat Pox:- Two samples of goat-pox material got from Tiptur and Closepet were tried on goats and only the sample from the latter place gave rise to a form of atypical pox. But on subsequent passages to another goat and a sheep, no

reaction was observed.

Cow-pox:- A sample of cow-pox material collected from a cow affected with cow-pox was sent to this Institute by the Veterinary Inspector, Bangalore. This was infected to two calves, but only one of them developed the disease and the material from the same has been collected and preserved. A small quantity of the material was sent to the Superintendent, Vaccine Institute, Bangalore, for use in the preparation of lymph for vaccination against small-pox.

Fowl-pox:- Fowl-pox virus was collected from naturally affected birds during a few outbreaks of the disease in the state and two strains of the virus were got from Vienna and Berlin. These strains were first passed through fowls to ascertain their virulence. The preparation of fowl-pox vaccine was undertaken by passages of the virus through pigeons. Two batches of chickens were vaccinated with the fowl-pox vaccine (fowl-pox virus attenuated by passaging through pigeons) for testing its potency, but unfortunately an outbreak of fowl-pest as in the previous year killed all the protected birds, necessitating further work to be resumed next year

IX. REVENUE & EXPENDITURE.

The total income derived by the sale of biologicals to places outside the State as well as to the Mysore Civil Veterinary Department and also by the sale of done animals, manure, etc., amounts to Rs. 74,000/- during the year under report as against Rs. 92,000/- in the previous year. The reduction in the rate of Anti-Rinderpest Serum from

two annas to an anna and a half and the other concession sanctioned in Government Order No. D. 7363-4 C.V. 82-34-4 dated 5-8-35 affected the revenue of the Institute to the extent of nearly Rs.15,000/- otherwise the Institute would have realised a revenue of about Rs. 90,000/- this year also the income from outside the State alone amounting to Rs. 49,000/- as against Rs. 42,600/- in the previous year. Thus it is seen that the decrease in revenue during the year under report is solely due to the fall in income from the Mysore Civil Veterinary Department in as much as that the total value of the products supplied for use within our State during the year, would work out to only Rs. 39,200/- as against Rs. 48,200/- in the previous year (as detailed in ~~the Annexure No.~~ Appendix XVI). However as the quantity of Rinderpest Serum (Ante) purchased by the Mysore Civil Veterinary Department during the year was very little, the reduction in the rate of that product did not affect the revenue of the Institute to any appreciable extent. This fall in revenue is therefore chiefly due to the general decline in the outbreak of epizootics in our State. Moreover as the Mysore Civil Veterinary Department undertook timely inoculations with vaccines in preference to sera as a more economical and effective measure of preventing contagious diseases of cattle, there was a drop in the demand for sera which are costlier than vaccines, and thus it had an adverse effect on the revenue of the Institute.

It is however gratifying to note that although there is a fall in revenue due to the reasons explained above, the total quantity of the

various biologicals supplied to places outside the state during the year under report is considerably more than that in the previous year.

As regards the expenditure, a sum of Rs. ~~75,100/-~~ 74,900/- has been expended during ~~the~~ 1935-36 out of the budget grant of Rs. 82,200 as against the total expenditure of Rs. 70,600 in the previous year. The slight increase in the expenditure is mainly due to the purchase of certain special and costly apparatus to the extent of Rs. 11,000/- under "Apparatus and Chemicals", during the year, as against the expenditure of only Rs. 3,100/- under the same head in the previous year. This unusually heavy investment, which may be considered as almost a capital expenditure, was mainly on account of the additional laboratory facilities required to be provided in this institute to Dr. P.N. Narayanaswami Naidu, Assistant Superintendent, Civil Veterinary Department.

Thus it may however be stated that the working of the Institute from a financial point of view is also very satisfactory inspite of certain unfavourable factors such as the reduction in the rate of Anti-rinderpest serum on the one hand, and the purchase of some special and costly apparatus etc., on the other.

X. GENERAL.

Education:- For the last three years 16 Veterinary graduates fro. different places, underwent short course training in this institute, the following being the candidates selected for

training during the year under report:-

1. Mr. V. Santiago, G.M.V.C. (Malaya States)
2. " S. Atchutha Rao, G.V.Sc., (Mysore State)
3. " S. Sakharama Rao, G.V.Sc., "
4. " A. Sundara Murthy, G.V.Sc., "
5. "K.S. Ramaswamy, G.V.Sc., "
6. " V.D. Raghunatha Rao, G.B.V.C., "
7. " K.S. Srirangachar, G.V.Sc., "
8. " C.T.C. Menon, G.V.Sc., (Cochin State)

Visitors:- It may not be out of place to mention here that the importance and usefulness of the Institute has been fairly well established and it has become a place of not only of scientific interest but also of much general interest, attracting every year several distinguished visitors, both official and non-official, from within as well as from outside the State.

Aminulmulk Sir Mirza Mohammed Ismail, Kt., C.I.E., O.B.E., K.C.I.E., Dewan of Mysore, and Mr. N. Madhava Rao, B.A.B.L., Second Member in Council were pleased to visit this Institute during the year under report.

Dr. Sir. K.P. Puttanna Chetty, Sir Purushotham Doss Thakur Doss, Sir T. Vijayaraghava Charya and members of the South Indian Association including Dr. C.V.Raman, Dr. Fowler, ~~Sr. Vydya Sastravaidya-pravina Visarada~~ S. Subba Rao, Dr. C.B. Rama Rao, etc were also pleased to visit the Institute and to go round all the sections.

The following were some of the other distinguished visitors to this Institute during

the year under report:-

1. Dr. C.R. Fay, Reader in Agriculture, Cambridge University.

2. Mr. B.C. Burt, Officiating Vice Chairman, Imperial Council of Agricultural Research.

3. Dr. Md. Hafiz Syed, M.A., Ph.D., D. Litt., University of Allahabad.

4. Dewan Bahadur N.N. Iyengar, Chief Engineer, with other members of the Mysore Engineer's Association.

5. Dr. Mukhandani, Agricultural Chemist, Behar & Orissa.

6. Mr. S.A. Venkataraman, I.C.S., Collector of Chittoor.

7. Rajkumar Man Singh of Banera, Bar-at-law (Mewar)

8. Mr. Adi K. Sett, Hon. Personal Assistant to the Dewan of Mysore.

9. Mr. M.C. Cherian, Government Entomologist, Madras.

10. Rai Bahadur RangaRam, Finance Member, Khairpur State.

11. Mr. S. Ashfague Hussain, Professor of in Ajmeer Mayo College.

12. Mr. Krishna warriar, Superintendent, of Agriculture, Trichur.

13. Mr. Syed Ariffuddin, Superintending Engineer, Hyderabad.

14. Mr. Taj Peeran, Retired Deputy Commissioner, Bangalore.

15. Dr. S. Sanjeeva Rao, M.A., Ph.D., Professor of Chemistry, Central College, Bangalore.

16. Mr. M.G. Mekhri, Registrar of Cooperative Societies in Mysore, Bangalore.

17. The Superintendent, Imperial Dairy Farm, Bangaloro, with his students.

18. Some Professors and students of the Agricultural College, Coimbatore.

19. Prof. Mehta of the Baroda College with his students.

20. Mr. C.J. Fernandez, Chief Veterinary Officer, Junagadh State. (Now the Director of Animal Husbandry, Jodhpur State)

21. Mr. Louis Bromfield, Novelist, France, with his Secretary, Mr. Hakins.

22. Miss Cooke, New York.

23. Mr. E.J. Henning, Science Department, South India Training School of Seventh Day Adventists, with his students.

24. Dr. J.C. Kumarappa, M.A., Ph.D.,

Acknowledgments:- Before concluding this report I take this opportunity to thank all those officers of the Agricultural, Live Stock and Civil Veterinary Department, who kindly cooperated in the work of this Institute during the year. My thanks are also due to all those officers both in and outside India who kindly arranged to send their publications and the Annual Reports of their departments in exchange for the Annual Reports of this Institute. I am very much obliged to all the officers whom I interviewed during my recent visit on deputation, to several States in India, for their continued kindness and courtesy towards me and for having afforded me an opportunity to discuss with them regarding the various epizootic diseases. I offer my best thanks to the Directors and other officers of all the Biological Institutes I visited on deputation , for having received me very kindly and explained to me at great length the technical working of the different sections of their Institutes. I am grateful to the following officers for having kindly arranged to send certain bacterial cultures &c., to this Institute during the year under report:-

1. Prof. Dr. Miessner, Tierarztliche Hochschule, Hannover, Misburgedaum 16.

2. The Principal , Veterinary College, Madras.

3. The Director,
   Imperial Institute of Veterinary
   Research, Muktesar.

4. Dr. Zeissler,
   Stadtsches Krankhenhan's,
   Altona Elbe,
   Hamburg, Germany.

5. Prof. Dr. R. Mulla,
   Kolan - dintental,
   Glencle strarse, 77.

6. The Director,
   Pasteur Institute,
   25, Rue De Dr. Roux,
   Paris,(France.)

7. Hofrat Dr. Gerlack,
   Bundesamstalt fier,
   Tierschehenbekampfung,
   Modling, Vienna (Austria)

9. Prof. Dr. Bierbaum,
   Institute fiir Tierscuchentherapie,
   Universitat, Berlin, N.W. 7

10. The Director,
    Veterinary Services,
    Cndersteport, South Africa.

11. The Director,
    Institute, Robert Kock.

12. Prof. Dr. Bitter, Benthern, O.S.
    Stadtl. Hygiensche Inst.

In concluding this report I feel it my pleasant duty to place on record my great appreciation of the valuable services of Mr. P.U. Nayar, as Bacteriological Assistant and also of the continued good work done throughout the year by the staff of this Institute, executive as well as ministerial, with great zeal and loyalty.

Superintendent,
Serum Institute.

Appendix. I

Statement showing the quantity of Rinderpest Virus produced, issued and balance remaining monthly for the year 1935-36

Month		Balance at the beginning of the month.	Quantity produced during the month	Total	Quantity supplied to		Quantity of virus used in the Institute including wastage etc.	Total	Stock of virus on the last day of the month.
					Civil Vety. Department	Outside the State.			
		Ozs.	Ozs.	Ozs	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.
July	1935	24	37	61	-	-	56	56	5
August	"	5	48	53	-	-	39	39	14
September	"	14	30	44	-	-	40	40	4
October	"	4	49	53	-	-	36	36	17
November	"	17	38	55	-	11	30	41	14
December	"	14	27	41	3	1	26	30	11
January	1936	11	47	58	-	4	48	52	6
February	"	6	45	51	-	1	34	35	16
March	"	16	29	45	-	2	38	40	5
April	"	5	21	26	-	-	26	26	-
May	"	-	22	22	-	-	22	22	nil
June	"	nil	30	30	-	-	30	30	-
		24 ozs or 600 c.c.	423 ozs or 10,575 c.c.	447 ozs or 11,175 c.c	3 ozs or 75 cc. used at Birur.	19 ozs or 475 cc	425 ozs or 10,625 cc.	447 ozs or 11,175 cc.	nil

Forthwith

S.D. Achar,
Superintendent,
Serum Institute.

Appendix II

Statement showing the quantity of Rinserpest Goat Virus produced, issued and balance remaining monthly for the year 1935-36.

Month		Balance at the beginning of the month.	Quantity produced during the month.	Total	Quantity supplied to		Quantity used in the Institute including wastage etc.	Total	Stock of Goat Virus on the last day of the month.
					Civil Veterinary department.	Outside the State.			
		c.c	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.
July	1935	405	1440	1845	-	60	1485	1545	300
August	"	300	1290	1590	-	105	1140	1245	345
September	"	345	1440	1785	270	240	780	1290	495
October	"	495	1290	1785	-	90	1395	1485	300
November	"	300	960	1260	60	15	1035	1110	150
December	"	150	1140	1290	-	285	750	1035	255
January	1936	255	1035	1290	75	60	990	1125	165
February	"	165	1005	1170	-	60	780	840	330
March	"	330	1425	1755	-	45	1380	1425	330
April	"	330	765	1095	-	225	780	1005	90
May	"	90	1335	1425	765	-	555	1320	105
June	"	105	1710	1815	300	-	1320	1620	195
	For the year	405	14835	15240	1470	1185	12390	15045	195

S.D. Achar,
Superintendent,
Serum Institute.

Appendix. III

Statement showing the quantity of Anti Rinderpest Serum produced, supplied and balance remaining monthly for the year 1935-36.

Month		Balance at the beginning of the month.	Quantity produced during the month.	Total	Quantity supplied to		Quantity of Serum used in the Insti tute including wastage etc.	Total	Stock of Serum on the last day of the month
					Civil Vety. Department.	Outside the State.			
		Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July	1935	81,800	44,700	1,26,500	-	3,500	-	3,500	1,23,000
August	"	1,23,000	-	1,23,000	200	31,000	-	31,200	91,800
September	"	91,800	-	91,800	2,000	20,000	50	22,050	69,750
October	"	69,750	-	69,750	-	12,000	200	12,200	57,550
November	"	57,550	43,000	1,00,550	800	15,250	-	16,050	84,500
December	"	84,500	-	84,500	150	25,250	-	25,400	59,100
January	1936	59,100	-	59,100	-	22,250	400	22,650	36,450
February	"	36,450	-	36,450	-	2,250	-	2,250	34,200
March	"	34,200	82,000	1,16,200	-	25,500	-	25,500	90,700
April	"	90,700	-	90,700	-	1,000	-	1,000	89,700
May	"	89,700	-	89,700	2,350	21,000	-	23,350	66,350
June	"	66,350	-	66,350	1,000	11,000	-	12,000	54,350
		For the year 81,800	1,69,700	2,51,500	6,500	1,90,000	650	1,97,150	

S. D. Achar,
Superintendent,
Serum Institute.

Appendix. IV

Statement showing the quantity of Anti Haemorrhagic Septicaemia Serum produced, issued and balance remaining monthly for the year 1935-36.

Month		Balance at the beginning of the month.	Quantity produced during the month	Total	Quantity supplied to		Quantity of Serum used in the Institute including wastage etc.	Total	Stock of Serum on the last day of the month.
					Civil Vety. Department.	Outside the State.			
		Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July	1935	1,02,520	-	1,02,520	5,600	13,940	-	19,540	82,980
August	"	82,980	-	82,980	600	5,460	-	6,060	76,920
September	"	76,920	-	76,920	6,440	5,620	-	12,060	64,860
October	"	64,860	-	64,860	1,600	5,000	-	6,600	58,260
November	"	58,260	-	58,260	-	10,000	-	10,000	48,260
December	"	48,260	-	48,260	300	360	-	660	47,600
January	1936	47,600	9,760	57,360	-	-	-	-	57,360
February	"	57,360	3,340	60,700	740	-	-	740	59,960
March	"	59,960	-	59,960	220	-	-	220	59,740
April	"	59,740	10,800	70,540	1,300	400	-	1,700	68,840
May	"	68,840	-	68,840	1,000	5,160	-	6,160	62,680
June	"	62,680	-	62,680	920	11,160	-	12,080	50,600
		1,02,520	23,900	1,26,420	18,720	57,100	-	75,820	

S. D. Achar,
Superintendent,
Serum Institute.

Appendix V

Statement showing the quantity of Anti Blackquarter Serum produced, issued, and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month.	Quantity produced during the month.	Total.	Quantity supplied to		Quantity of Serum used in the institute including wastage etc.	Quantity used at Ajjampur.	Total	Stock on hand on the last day of the month.
				Civil vety. Department.	Outside the state.				
	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July 1935	68,340	-	68,340	-	80	-	60	140	68,200
August "	68,200	-	68,200	440	4,000	-	-	4,440	63,760
September "	63,760	-	63,760	1,320	-	-	-	1,320	62,440
October "	62,440	-	62,440	640	2,000	-	-	2,640	59,800
November "	59,800	-	59,800	320	-	-	-	320	59,480
December "	59,480	-	59,480	-	-	-	-	-	59,480
January 1936	59,480	-	59,480	40	-	-	-	40	59,440
February "	59,440	-	59,440	560	-	-	-	560	58,880
March "	58,880	-	58,880	780	360	-	-	1,140	57,740
April "	57,740	-	57,740	360	200	-	-	560	57,180
May "	57,180	-	57,180	820	4,400	-	-	5,220	51,960
June "	51,960	-	51,960	-	2,000	-	-	2,000	49,960
	68,340	-	68,340	5,280	13,040	-	60	18,380	

S. D. Achar,
Superintendent,
Serum Institute.

Appendix VI

Statement showing the quantity of Anti Anthrax Serum produced, issued and balance remaining monthly for the year 1935-36.

Month		Balance at the beginning of the month.	Quantity produced during the month.	Total	Quantity supplied to		Quantity of Serum used in the Institute including wastage etc.	Total	Stock of Serum on the last day of the month
					Civil Vety. Department	Outside the State			
		Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July	1935	23,000	-	23,000	1,980	-	-	1,980	21,020
August	"	21,020	-	21,020	300	-	-	300	20,720
September	"	20,720	-	20,720	1,020	20	60	1,100	19,620
October	"	19,620	-	19,620	520	500	-	1,020	18,600
November	"	18,600	-	18,600	360	-	-	360	18,240
December	"	18,240	7,140	25,380	4,880	-	-	4,880	20,500
January	1936	20,500	19,220	39,720	440	-	-	440	39,280
February	"	39,280	-	39,280	300	-	-	300	38,980
March	"	38,980	-	38,980	5,340	-	-	5,340	33,640
April	"	33,640	-	33,640	1,980	-	-	1,980	31,660
May	"	31,660	-	31,660	4,600	-	-	4,600	27,060
June	"	27,060	-	27,060	1,940	500	-	2,440	24,620
		23,000	26,360	49,360	23,660	1,020	60	24,740	

S. D. Achar,
Superintendent,
Serum Institute.

Appendix. VII

Statement showing the quantity of Anti Fowl Cholera Serum produced, issued and balance remaining monthly for the year 1935-36.

Month		Balance at the beginning of the month.	Quantity produced during the month.	Total	Quantity supplied to		Quantity of Serum used in the Institute including wastage etc.	Total	Balance Stock of Serum on the last day of the month	Remarks
					Civil Vety. Department.	Outside the State.				
		Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses	
July	1935	5,150	-	5,150	-	-	-	-	5,150	
August	"	5,150	-	5,150	50	-	-	50	5,100	
September	"	5,100	-	5,100	100	-	75	175	4,925	
October	"	4,925	-	4,925	-	-	-	-	4,925	
November	"	4,925	-	4,925	-	-	25	25	4,900	
December	"	4,900	-	4,900	-	-	25	25	4,875	
January	1936	4,875	2,050	6,925	-	-	50	50	6,875	
February	"	6,875	-	6,875	-	-	-	-	6,875	
March	"	6,875	-	6,875	50	75	25	150	6,725	
April	"	6,725	-	6,725	-	-	-	-	6,725	
May	"	6,725	-	6,725	250	-	-	250	6,475	
June	"	6,475	-	6,475	350	50	25	425	6,050	
For the Year		5,150	2,050	7,200	800	125	225	1,150		

S. D. Achar,
Superintendent,
Serum Institute.

Appendix. VIII

Statement showing the quantity of Haemorrhagic Septicaemia Vaccine prepared, issued and balance remaining monthly for the year 1935-36

Month		Balance at the beginning of the month.	Quantity produced during the month.	Total	Quantity supplied to		Quantity of Vaccine used in the Institute including wastage etc.	Total	Stock of Vaccine on the last day of the month.
					Civil Vety. Department.	Outside the State.			
		Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July	1935	12,600	24,250	36,850	14,500	12,000	-	26,500	10,350
August	"	10,350	16,000	26,350	6,100	8,000	-	14,100	12,250
September	"	12,250	13,000	25,250	18,250	6,000	200	24,450	800
October	"	800	11,150	11,950	4,550	-	-	4,550	7,400
November	"	7,400	11,300	18,700	1,400	10,000	-	11,400	7,300
December	"	7,300	-	7,300	800	-	-	800	6,500
January	1936	6,500	-	6,500	200	500	-	700	5,800
February	"	5,800	-	5,800	250	-	-	250	5,550
March	"	5,550	15,100	20,650	2,650	-	-	2,650	18,000
April	"	18,000	-	18,000	3,050	100	-	3,150	14,850
[illegible]	"	14,850	-	14,850	7,800	-	-	7,800	7,050
[illegible]	"	7,050	12,300	19,350	3,400	8,500	-	11,900	7,450
	For Belgaum	12,600	1,03,100	1,15,700	62,950	45,100	200	1,08,250	

S. D. Achar,
Superintendent,
Serum Institute.

Appendix. 14

Statement showing the quantity of Blackquarter Filtrate prepared, issued and balance remaining monthly for the year 1935-36.

Month		Balance at the beginning of the month.	Quantity produced during the month.	Total	Quantity supplied to		Quantity of Filtrate used in the Institute including wastage etc.	Total	Stock of Filtrate on the last day of the month.
					Civil Vety. Department.	Outside the state.			
		Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July	1935	6,800	-	6,800	-	-	-	-	6,800
August	"	6,800	10,400	17,200	-	4,000	-	4,000	13,200
September	"	13,200	-	13,200	-	-	-	-	13,200
October	"	13,200	-	13,200	-	1,000	-	1,000	12,200
November	"	12,200	-	12,200	-	-	-	-	12,200
December	"	12,200	-	12,200	-	-	-	-	12,200
January	1936	12,200	-	12,200	-	-	-	-	12,200
February	"	12,200	-	12,200	-	350	-	350	11,850
March	"	12,200	-	12,200	-	-	-	-	11,850
April	"	11,850	-	11,850	-	2,000	-	2,000	9,850
May	"	11,850	-	11,850	-	-	-	-	9,850
June	"	9,850	-	9,650	-	-	-	-	
	Forty Thousand	-6,800	10,400	17,200	-	7,350	-	7,350	

S. D. Achar,
Superintendent,
Serum Institute.

Appendix.

Statement showing the quantity of Blackquarter Bacterin prepared, issued and balance remaining month by month for the year 1935-36.

Month		Balance at the beginning of the month.	Quantity produced during the month.	Total	Quantity supplied to		Quantity of Bacterin used in the Institute, including wastage.	Quantity used at Ajjampur.	Total	Stock of Bacterin on the last day of the month.
					Civil Vety. Department,	Outside the State.				
		Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July	1935	29,250	4,500	33,750	3,700	-	-	250	3,950	29,800
August	"	29,800	-	29,800	3,850	-	-	-	3,850	25,950
September	"	25,950	-	25,950	12,450	-	-	-	12,450	13,500
October	"	13,500	-	13,500	7,300	-	-	200	7,500	6,000
November	"	6,000	5,900	11,900	3,850	-	50	-	3,900	8,000
December	"	8,000	-	8,000	300	-	-	-	300	7,700
January	1936	7,700	6,200	13,900	11,900	-	50	-	1,950	11,950
February	"	11,950	-	11,950	6,850	-	-	-	6,850	5,100
March	"	5,100	15,400	20,500	6,400	-	50	-	6,450	14,050
April	"	14,050	-	14,050	6,600	200	-	-	6,800	7,250
May	"	7,250	18,000	25,250	12,850	400	50	-	13,300	11,950
June	"	11,950	23,900	35,850	17,550	-	-	250	17,800	18,050
	For the year	29,250	73,900	1,03,150	83,600	600	200	700	85,100	

S. D. Achar,
Superintendent,
Serum Institute.

Appendix. XI

Statement showing the quantity of Sheep-pox Vaccine prepared, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month.	Quantity produced during the month.	Total	Quantity supplied to		Quantity of Vaccine used in the Institute including wastage etc.	Quantity used at Doddballapur.	Total	Stock of Vaccine on the last day of the month.
				Civil Vety. Department.	Outside the State.				
	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.
July 1935	42.600	-	42.600	10.00	-	-	-	10.00	32.600
August "	32.600	68.500	101.100	15.00	-	-	-	15.00	86.100
September"	86.100	-	86.100	-	-	-	-	-	86.100
October "	86.100	-	86.100	14.00	-	1.000	-	15.00	71.100
November "	71.100	-	71.100	20.50	-	-	-	20.50	50.600
December "	50.600	-	50.600	39.00	-	-	-	39.00	11.600
January 1936	11.600	46.400	58.000	46.50	-	-	-	46.50	11.500
February "	11.500	93.830	105.330	80.50	-	-	-	80.50	24.830
March "	24.830	65.500	90.330	79.00	-	-	-	79.00	11.330
April "	11.330	70.500	81.830	59.00	-	-	-	59.00	22.830
May "	22.830	78.000	100.830	58.00	-	0.830	5.000	63.83	37.000
June "	37.000	64.000	101.000	72.00	4.000	-	-	76.00	25.000
For the year	42.600	486.730	529.330	493.50	4.000	1.830	5.000	504.330	

S. D. Achar,
Superintendent,
Serum Institute.

Appendix. XII

Statement showing the quantity of Fowl Cholera Vaccine produced, issued, and balance remaining monthly for the year 1935-36.

Month		Balance at the beginning of the month.	Quantity produced during the month.	Total	Quantity supplied to		Quantity of Vaccines used in the Institute including wastage etc.	Total	Stock of Vaccine on the last day of the month.	Remarks.
					Civil Vety. Department.	Outside the State				
		Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses	
July	1935	2,100	-	2,100	200	-	-	200	1,900	
August	"	1,900	-	1,900	50	-	-	50	1,850	
September	"	1,850	-	1,850	-	-	150	150	1,700	
October	"	1,700	-	1,700	-	-	-	-	1,700	
November	"	1,700	-	1,700	-	-	50	50	1,650	
December	"	1,650	6,200	7,850	-	-	-	-	7,850	
January	1936	7,850	-	7,850	250	-	-	250	7,600	
February	"	7,600	-	7,600	-	-	-	-	7,600	
March	"	7,600	-	7,600	-	50	-	50	7,550	
April	"	7,550	-	7,550	50	150	-	200	7,350	
May	"	7,350	-	7,350	250	200	-	450	6,900	
June	"	6,900	-	6,900	900	200	-	1,100	5,800	
	For Retd Year	2,100	6,200	8,300	1,700	600	200	2,500		

S. D. Achar,
Superintendent,
Serum Institute.

Appendix. XIII

Statement showing the quantities of Sera and other products, supplied and balance remaining during the year 1935-36.

Name of products	Opening balance	Quantity produced	Total	Quantity supplied to		Quantity used in the Institute including wastage etc.	Total	Stock on hand on 1st July 1936.
				Civil Qrty. Department	Outside the State			
	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
1. Anti Rinderpest Serum	81,800	1,69,700	2,51,500	6,500	1,90,000	650	1,97,150	54,350
2. Anti Haemorrhagic Septicaemia Serum.	1,02,520	23,900	1,26,420	18,720	57,100	-	75,820	50,600
3. Anti Blackquarter Serum	68,340	-	68,340	5,280	43,040	60 at Ajjampur	18,380	49,960
4. " Anthrax Serum	23,000	26,360	49,360	23,660	1,020	60	24,740	24,620
5. Haemorrhagic Septicaemia Vaccine.	12,600	1,03,100	1,15,700	62,950	45,100	200	1,08,250	7,450
6. Blackquarter Bacterin.	29,250	73,900	1,03,150	83,600	600	200 & 700 at Ajjampur	88,100	18,050
7. Blackquarter Filtrate	6,800	10,400	17,200	-	7,350	-	7,350	9,850
8. Sheep-pox Vaccine	42.600	486.730	529.330	493.50	4.000	1.830 & 5.0 at Dodballapur	504.330	25.000
Rinderpest Virus (bull virus)	24 ozs or 600 cc.	423 ozs or 10575 cc	447 ozs or 11175 cc	3 ozs or 75 cc. used at Birur	19 ozs or 475 cc.	425 ozs or 10625 cc	447 ozs or 11175 cc.	nil
Rinderpest Virus (Goat ")	405 cc	14,635 cc	15240cc	1470 cc	1185 cc	12390 cc	15045 cc.	195 cc.
Fowl Cholera Serum	5150	2050	7200	800	125	225	1150	6050
Fowl Cholera Vaccine	2100	6200	8300	1700	600	200	2500	5800

S.D. Achar,

Superintendent, Serum Institute

Appendix.XLV

Statement showing the products supplied to ~~the~~ different Provinces, States, etc., during the year 1935-36.

Name of product	Mysore.	Hydera-bad.	Coorg.	Baroda.	Ichalka ranji.	Trichur, Cochin.	Puduk-kottai.	Bom-bay.	Ram-durg.	Palal N. Gujarat.	Nankapkot via (Bannagar)	C & M sta-tion Banga lore.	Used at Ajjam-pur., & Insti-tute	Colom bo.	Total.
	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses
Anti Rinderpest Serum.	6,500	1,65,000	5000	12000	-	-	-	4500	3300	100	100	-	650	-	1,97,150
Anti Haemorrhagic Septicaemia Serum	18,720	53,000	-	1400	40	1940	100	320	-	-	-	300	-	-	75,820
Anti Blackquarter Serum	~~xxxxx~~ 5,280	~~5x280~~ 12,000	-	-	80	-	960	-	-	-	-	-	60 at Ajjampur	-	18,380
Ant Anthrax Serum	23,660	1,000	-	-	-	20	-	-	-	-	-	-	60	-	24,740
Haemorrhagic Septicaemia Vaccine.	62,950	39,000	-	6000	-	-	100	-	-	-	-	-	200	-	1,08,250
Blackquarter Bacterin.	83,600	-	-	-	-	-	600	-	-	-	-	-	700 at Ajjampur 200	-	85,100
Blackquarter Filtrate	-	7,000	-	-	-	-	350	-	-	-	-	-	-	-	7,350
Sheeppox Vaccine	493.50	-	-	-	-	-	4.00	-	-	-	-	-	1.830 5.00 at Dodballapur	-	504.330
Rinderpest Virus (Bovine)	3 ozs. 75 cc. used at Birur	-	13 ozs or 325 cc	-	-	-	-	-	6 ozs or 150 cc.	-	-	-	32 ozs. or 800 cc.	-	54 ozs or 1350 cc.
Rinderpest Virus	1470 cc	-	930 to	30 cc	-	-	-	-	825 cc.	-	-	-	150cc.	-	2205 c

Appendix XV

Statement showing the details of supplies made for the first time during 1935-36.

Place.	Name of product supplied for the first time during the year and the quantities supplied.
1. Baroda ...	1,400 doses of Anti Haemorrhagic Septicaemia Serum.
	30 c.c. Goat Virus.
2. Pudukkottai ...	100 doses of Anti Haemorrhagic Septicaemia Serum.
	100 doses of Haemorrhagic Septicaemia Vaccine.
3. Coorg ...	50 doses of Anti Fowl Cholera Serum
	550 doses of Fowl Cholera Vaccine.
4. Cochin ...	50 doses of Anti Fowl Cholera Serum.
	50 doses of Fowl Cholera Vaccine.
5. Hamburg (New customer)	3,300 doses of Anti Rinderpest Serum.
	6 ozs. Rinderpest Virus (Bovine)
	225 c.c. of Goat Virus.
6. Mr.K.R.S. Iyer, Lecturer, Veterinary College, Bombay. (New Customer) ...	4,500 doses Anti Rinderpest Serum
	320 doses of Anti Haemorrhagic Septicaemia Serum.
7. Mr. K.R. Patel, Kalol. (North Gujarat, New customer)	100 doses of Anti Rinderpest Serum.
8. Mr. Khanji Bai of Rajkot (New customer)	100 doses of Anti Rinderpest Serum
9. Colombo (New customer)	25 doses of Anti Fowl Cholera Serum.
10. Trivandrum (New customer)	1,200 doses of Urine Harmone.

S. D. Achar,
Superintendent,
Serum Institute.

Appendix XVI.

Comparative Statement of Revenue and Expenditure of the Serum Institute for the year 1935-36.

Revenue					Expenditure.							
Sale of done animals	Sale of Manure etc.	Sale of Sera and vaccines to		Total	Salaries.	Establishment.	Travelling allowance.	Purchase of animals for Serum & Virus production.	Feeding charges	Apparatus chemicals and glassware	Contingencies.	Total.
		within the State.	outside the State.									
Rs. a. p												
1,852- 0- 0	77- 3- 5	39,208-11- 0	35,759- 2- 0	74,897- 0- 3	7,049- 8- 0	33,318- 7- 0	1,764-11- 0	5,536-14- 0	9,275- 7-11	11,002-12- 0	6,948-11- 1	74,896- 7- 0

S. D. Achar,
Superintendent,
Serum Institute.

APPENDIX. XVII

Table showing the results of smears examined during the year 1935-36.

Disease suspected.	Number of smears			Total	Remarks
	Positive	Doubtful	Negative.		
Anthrax ...	31	3	5	39	
Blackquarter ...	182	23	46	251	
Haemorrhagic Septicaemia ..	198	22	72	292	
Pasteurella aviseptica ...	201	7	79	287	
Theilaria mutans ...	118	-	301	419	
Post mortem smears of Baci. Nearogen group ...	312	63	115	490	
Total ...				1778	

S. D. Achar,
Superintendent,
Serum Institute.

Achar

Appendix XVIII.

PRICE LIST OF BIOLOGICAL PRODUCTS PREPARED IN THE MYSORE SERUM INSTITUTE, HEBBAL, BANGALORE.

-ooo-

Name of product	Total contents in a bottle.	Unit dose for charging	Cost per unit dose Rs. a.p
1. Anti Rinderpest Serum	250 c.c. or 50 doses	5 c.c.	0-1-6
2. Anti Blackquarter Serum	300 c.c. or 20 doses	15 c.c.	0-4-0
3. Anti Haemorrhagic Septicaemia Serum	- do -	15 c.c.	0-4-0
4. Anti Anthrax Serum	- do -	15 c.c.	0-4-0
5. Haemorrhagic Septicaemia vaccine	250 c.c. or 50 doses	5 c.c.	0-2-0
6. Blackquarter Filtrate	- do -	5 c.c.	0-3-6
7. Blackquarter Bacterin	- do -	5 c.c.	0-3-6
8. Sheep pox Vaccine (supplied in ampoules)	100 doses in 1 ampoule	~~20 c.c.~~ 1 c.c.	0-6-0 per 100 doses
9. Rinderpest Bovine virus (supplied in 1 oz. and 2 oz. bottles)	25 c.c. or 25 doses	1 c.c.	0-1-0
10 Rinderpest Goat Virus (Supplied in 1 oz. bottle)	15 c.c. in one oz. bottle	15 c.c.	3-8-0 per 15 c.c.
11 Fowl Cholera Serum 12 Fowl Cholera Vaccine	not charged for at present.		

N.B.-

The minimum quantity of each product that can be supplied at a time is one bottle as noted in column 2.

2. These rates are for free delivery at the Institute premises and are inclusive of the cost of packing cases, and bottles. Cart hire is charged at Rs.1-8-0 per cart per trip when arranging for despatch of the consignments by railway parcel.

3. Credit is allowed to the customers for the empties returned at Re.0-12-0 per undamaged standard big case and at one anna for each standard half pint bottle.

4. The Institute cannot be held responsible for any breakage or losses in transit.

Appendix F G—1]

SUBJECT.....

.....

.....

Section C.V

File No. 33-36

Serial No. 2

Diary No. of letter replied to.....

No. 8.3584/Gen/admn Report—

To

The Superintendent, Govt Printing, Bangalore

General and Revenue Secretariat

( )

the *193* .

Sir,

I am directed to forward herewith a copy of the Administration Report of the Mysore Seven Districts for the year 1935-36 with the remarks of the Govt of Afns and to request that it may be caused to be set in type and ~~the work~~ stet ~~number of copies as noted in the margin~~ and kept ready for being bound with the Govt remarks thereon, which will be sent to you in due course

Date of issue 30.11.36

Signed by Mr K Subba Rao

100 Copies to the Govt of Afns
50 Copies to this Office

stet

List of enclosures.....

Copied by .....

Examined by.....

WD 03601—GPB—30,000—23-9-35

Two clean proofs may be arranged to be sent direct to the Dir of Agriculture for ~~duplication~~ approval before final copies are struck off.

Please etc

26.11.36
for Secy

Memo no. D. 3585 dt 30.11.36

Copy to the Dir of Agri. with reference to his letter no Roc 570/36-37 H.C.157 dt 24/11/36

B.O
26.11.36
for Secy

PROCEEDINGS OF THE GOVERNMENT OF H.H. THE MAHARAJA OF MYSORE.

READ:-

Letter No.Roc.500/36-37/H.C.157 dated 24th November 1936 from the Director of Agriculture, submitting the Administration Report of the Mysore Serum Institute for the year 1935-36 with his review thereon.

ORDER NO:

Dated, Bangalore, the

RECORDED.

2. Government are glad to learn that rinderpest has been practically eradicated from the State and that the few outbreaks which occurred during the year were successfully combated by adopting the latest "Goat virus alone" method.

3. It is reported that the sera and vaccines prepared in the Institute are becoming increasingly popular outside the State ~~and that the total quantity of the various biological products exported was considerably more than in the previous year.~~ Notwithstanding this fact the receipts from this source fell from Rs.42,600 in 33-34 to Rs.33,750 in the year under review. ~~It seems to Government~~ that the reduction in the selling price of anti-rinderpest serum from 2 annas to 1½ annas does not fully account for this decline in income.

~~4. The decline in the receipts of~~ by the sale of the products to the Mysore Civil Veterinary Department was equally

~~marked. The reduction in the price of anti-rinderpest serum had little effect in this case as the quantity of this product supplied to the Department was inconsiderable.~~ The main causes for the fall ~~in revenue~~ are stated to be the general decline in the outbreak of epizootics in the State and the greater use of vaccines for inoculations in preference to the costlier sera.

3. ~~In the previous years, the receipts~~ of the Institute always exceeded the expenditure thereby having a surplus towards depreciation and interest on capital invested on the Institute. ~~In the year under review, however,~~ the expenditure exactly balanced the receipts, ~~the latter slumping from Rs.1,27,300 in 33-34 to Rs.74,900 in 35-36. The Institute has thus ceased to be self-supporting.~~ But it is pointed out that there was an abnormal item of expenditure viz., the purchase of apparatus and chemicals at a cost of Rs.11,000 during the year againt Rs.3,000 in the previous year. ~~Even so, it is clear that the time has arrived when it is necessary to take stock of things with a view to augment~~ This however needs to adopt measures to increase the revenue and effect economies in all possible ways. The Director of Agriculture is requested to examine this question and submit a report to Government.

4. It is stated in the report that the present cattle sheds are ~~very~~ unsatisfactory and that it is ~~very~~ necessary to rebuild them on a permanent basis with Mangalore tiled roofing.

the report also stresses the urgent need for the construction of residential quarters to the officers and staff of the Institute. ~~In the existing circumstances however~~ there is great need to proceed cautiously in the matter of fresh capital expenditure on the Institute. These questions will be carefully considered at budget time on receipt of detailed proposals ~~from the Director.~~

7. Government ~~are glad to hear~~ note that as a result of the recent the ~~Superintendent of the Institute derived much benefit from~~ his recent tour throughout India and visit to Ceylon ~~and that he~~ has after his tour been able to introduce some refinements and improvements into the working of the Institute. ~~Government~~ hope that as a result of his ~~iteneration~~ the Institute will ~~get more custom~~

26/12

General Secretary to Govt.

To 26.12.26

The Director of Agriculture.

" Comptroller to Government.

" Senior Surgeon.

S.R.

Proceedings of the Government of H. H. the Maharaja of Mysore.

**

Read:-

Letter No.Roc.500/36-37/H.C.157 dated 24th November 1936 from the Director of Agriculture, submitting the Administration Report of the Mysore Serum Institute for the year 1935-36 with his review thereon.

C.V.33-36-3

Order No. D 4553-55

Dated. 18-1-1937.

Recorded.

2. Government are glad to learn that rinderpest has been practically eradicated from the State and that the few outbreaks which occurred during the year were successfully combated by adopting the latest "Goat virus alone" method.

3. It is reported that the sera and vaccines prepared in the Institute are becoming increasingly popular outside the State. Notwithstanding this fact the receipts of the institute from this source fell from Rs42,600 in 1933-34 to Rs33,750 in the year under review. The main causes for the fall are stated to be the general decline in the outbreak of epizootics in the State and the greater use of vaccines for inoculations in preference to the costlier sera. The expenditure exactly balanced the receipts, but it is pointed out that there was an abnormal item of expenditure viz., the purchase of apparatus and chemicals at a cost of Rs11,000 during the year against Rs3,000

in the previous year. It is however necessary to adopt measures to increase the revenue and effect economies in all possible ways. The Director of Agriculture is requested to examine this question and submit a report to Government.

4. It is stated in the report that the present cattle sheds are unsatisfactory and that it is necessary to rebuild them on a permanent basis with Mangalore tiled roofing. The report also stresses the urgent need for the construction of residential quarters for the officers and staff of the Institute.

5. Government note that as a result of his recent tour throughout India and visit to Ceylon the Superintendent of the Institute has been able to introduce some refinements and improvements in the working of the Institute.

General Secy. to Govt.

To

The Director of Agriculture.
The Comptroller to Govt.
The Senior Surgeon in Mysore

PROCEEDINGS OF THE GOVERNMENT OF HIS HIGHNESS
THE MAHARAJA OF MYSORE

Read:-

Letter No.F.O.C.500/36-37/H.C.157 dated 20th November 1936, from the Director of Agriculture, submitting the Administration Report of the Mysore Serum Institute for the year 1935-36 with his review thereon.

ORDER NO. D 4553-55/C.V. 33-36-3

Dated, Bangalore, the 11th January 1937.
18G

Recorded.

2. Government are glad to learn that rinderpest has been practically eradicated from the State and that the few outbreaks which occurred during the year were successfully combated by adopting the latest "Goat virus alone" method.

3. It is reported that the sera and vaccines prepared in the Institute are becoming increasingly popular outside the State. Notwithstanding this fact the receipts of the institute from this source fell from Rs.42,600 in 1933-34 to Rs.33,750 in the year under review. The main causes for the fall are stated to be the general decline in the outbreak of epizootics in the State and the greater use of vaccines for inoculations in preference to the costlier sera. The expenditure exactly balanced the receipts, but it is pointed out that there was an abnormal item of expenditure viz., the purchase of apparatus and chemicals at a cost of Rs.11,000 during the year against Rs.3,000 in the previous year. It is however necessary to adopt measures to increase the revenue and effect economies in all possible ways. The Director of Agriculture is requested to examine this question and submit a report to Government.

4. It is stated in the report that the present cattle sheds are unsatisfactory and that it is necessary to rebuild them on a permanent basis with Mangalore tiled roofing. The report also stresses the urgent need for the construction of residential quarters for the officers and staff of the Institute.

5. Government note that as a result of his recent tour throughout India and visit to Ceylon the Superintendent of the Institute has been able to introduce some improvements in the working of the Institute.

K Seetharamu

For General Secretary to Government.

The Director of Agriculture in Mysore. for
" Comptroller to Government.
" Senior Surgeon at Mysore

App. F VI G 10.

Government of His Highness the Maharaja of Mysore.

GENERAL AND REVENUE DEPARTMENTS

Administration Report

Reviews the ——— of the Mysore Sessions Districts for the year 1935-36

G. O. No. D 4553-55 C.V. 33-36-3 DATED 18-1-1937.

May this be

i. printed ? Yes

ii. treated as a standing order ?

iii. published in the Gazette English Part ?

iv. translated ?

v. placed at the disposal of the press ?

iv. published in the Gazette Kannada Part ?

No. Yes

Submitted for orders

15/1

15.1.37

Sent this un
to Kannada in
this Gazette ?
15.1.37

ADMINISTRATION REPORT OF THE MYSORE SERUM INSTITUTE FOR THE YEAR 1935-36

WITH THE GOVERNMENT REVIEW THEREON.

Government of his highness the Maharaja of Mysore.

GENERAL AND REVENUE DEPARTMENTS.

G. O. No. D. 4553-55—C. V. 33-36-3, dated 11—18th January 1937.

Administration Report.

Reviews the —— of the Mysore Serum Institute for the year 1935-36.

READ—

Letter No. R. O. C. 500—36-37/H. C. 157, dated 24th November 1936, from the Director of Agriculture, submitting the Administration Report of the Mysore Serum Institute, for the year 1935-36, with his review thereon.

ORDER No. D. 4553-55—C. V. 33-36-3, DATED BANGALORE, THE 11—18TH JANUARY 1937.

Recorded.

2. Government are glad to learn that rinderpest has been practically eradicated from the State and that the few outbreaks which occurred during the year were successfully combated by adopting the latest "goat virus alone" method.

3. It is reported that the sera and vaccines prepared in the Institute are becoming increasingly popular outside the State. Notwithstanding this fact, the receipts of the Institute from this source fell from Rs. 42,600 in 1933-34 to Rs. 33,750 in the year under review. The main causes for the fall are stated to be the general decline in the outbreak of epizootics in the State and the greater use of vaccines for inoculations in preference to the costlier sera. The expenditure exactly balanced the receipts, but it is pointed out that there was an abnormal item of expenditure, *viz.*, the purchase of apparatus and chemicals at a cost of Rs. 11,000 during the year against Rs. 3,000 in the previous year. It is however necessary to adopt measures to increase the revenue and effect economies in all possible ways. The Director of Agriculture is requested to examine this question and submit a report to Government.

4. It is stated in the report that the present cattle sheds are unsatisfactory and that it is necessary to re-build them on a permanent basis with Mangalore tiled roofing. The report also stresses the urgent need for the construction of residential quarters for the officers and staff of the Institute.

5. Government note that as a result of his recent tour throughout India and visit to Ceylon, the Superintendent of the Institute has been able to introduce some improvements in the working of the Institute.

M. VENKATESA IYENGAR,
Secretary to Government,
General Department.

To—The Director of Agriculture in Mysore.
The Comptroller to Government.
The Senior Surgeon in Mysore.

Exd.—C. K.

WD 1310—GPB—375—26-1-37

No. R. O. C. 500/H. C. 157.—36-37

OFFICE OF THE DIRECTOR OF AGRICULTURE,
Bangalore, dated 24th November 1936.

FROM

B. NARASIMHA IYENGAR, ESQ., B.A., PH.D.,
Director of Agriculture in Mysore,
Bangalore.

To

M. VENKATESA IYENGAR, ESQ., M.A.,
General Secretary to the Government
of Mysore, Bangalore.

SIR,

I have the honour to submit herewith in triplicate, the report on the working of the Mysore Serum Institute for the year 1935-36.

The main work of the Mysore Serum Institute during the year 1935-36 consisted of the preparation of several kinds of Sera and Vaccines required for controlling most of the important contagious diseases of live stock and poultry such as Rinderpest, Hæmorrhagic Septicæmia, Blackquarter, Anthrax, Sheep-pox, Fowl Cholera, etc. These biological products were prepared as usual in sufficiently large quantities to meet fully and promptly all the demands of not only the Mysore Civil Veterinary Department, but also of several other Indian States, *viz.*, Hyderabad, Baroda, Pudukkottai, Cochin, Ramdrug, Ichalkaranji, etc.

In addition to the production of Sera and Vaccines, several investigations and researches were also carried out in the Institute during the year, with a view to improve the efficacy of the biologicals that were already being issued for field use and also to prepare some more new products required for other diseases.

Although the primary object of this Institute is to prepare and supply the biologicals required for use within our State only, yet it is gratifying to note that the demand for these products during the year under report from places outside the State was even more than that from the Mysore Civil Veterinary Department, inasmuch as over 3,16,000 unit doses of Sera and Vaccines were supplied to places outside the State as against 2,52,000 unit doses issued to the Mysore Civil Veterinary Department.

Government were pleased to sanction in their orders No. D. 4991-2 C. V. 40-35-4, dated 14th February 1936 and No. D. 6980-81 C. V. 40-35-15, dated 16th May 1936, the deputation of the Superintendent to visit some important Indian States and Biological Institutes in South as well as in North India (including Colombo), with a view to acquaint himself with the epizootic diseases occurring in those States, the remedial measures adopted by them, etc., and also to study the working of other Biological Institutes as compared with that of this Institute. As a result of his visit to those places and personal discussions with the Veterinary Officers concerned, some more States have begun getting their requirements of Sera and Vaccines from our Institute. It is also proposed to start in this Institute the preparation of Rabies Vaccine (Veterinary) for prophylactic vaccination against rabies in animals on the lines adopted in the Pasteur Institutes at Coonoor, Colombo, etc.

Consequent on the appointment of Dr. P. M. Narayanaswami Naidu as Assistant Superintendent, Civil Veterinary Department (*vide* Government Notification No. D. 4527—C. V. 18-35-5, dated 27th January 1935) he was also provided in this

Institute with additional laboratory equipment, separate accommodation and other facilities to carry on research work, besides the facilities already afforded to the Assistant Superintendent, Scientific Section, Civil Veterinary Department, for the investigation of Johne's disease among cattle in our State and for carrying on the routine laboratory work of the Mysore Civil Veterinary Department.

Production and Issue of Biological products.

As there was an increased demand for Hæmorrhagic Septicæmia vaccine both from within as well as from outside the State during the year under report, the same had to be prepared in larger quantities as compared with the previous year. Similarly the production of Sheep-pox vaccine was also very much more this year (*viz.*, about 3½ times) than that in the preceding year. However, the production of Anti-Hæmorrhagic Septicæmia Serum and Blackquarter filtrate was very much reduced this year as there had been already on hand large stocks of the same as opening balance at the commencement of the year and also as there was practically no demand for the latter product from the Mysore Civil Veterinary Department. The production of Rinderpest Bull Virus and Rinderpest Goat Virus had also to be reduced considerably (*viz.*, by about 80 per cent and 45 per cent respectively) as there was very little demand for them owing to further decline in the incidence of Rinderpest in our State. Anti-Blackquarter Serum was not required to be prepared during the year as there was a large stock of this Serum remaining on hand as opening balance and also as the demand for this product from within the State was very much less, *viz.*, about 1/3 of what it was in the previous year. As there were 46,062 doses of Anti-Anthrax Serum at the commencement of 1934-35, no more of this product was required to be prepared that year. But as the stock thereof had run short during the year under report, it was necessary to replenish the stock by preparing 26,360 doses of this Serum.

As regards the supplies made to the Mysore Civil Veterinary Department, it is observed that there was an increased demand for Hæmorrhagic Septicæmia vaccine, Sheep-pox vaccine and Blackquarter Bacterin during the year, while there was a less demand for Anti-Hæmorrhagic Septicæmia Serum as compared with the supplies of the previous year. As a result of the introduction of Blackquarter Bacterin in preference to Blackquarter Filtrate, in view of the former being found to be more efficacious than the latter, there was no demand for Blackquarter Filtrate during the year from within our State. There was a marked fall in the supply of Goat Virus to the Mysore Civil Veterinary Department, as there was a further appreciable decline in the incidence of Rinderpest in our State. Besides, even the few outbreaks of Rinderpest that occurred among cattle in some parts of our State were controlled by adopting "goat virus alone" inoculations in preference to Serum Simultaneous method and as such the demand for Anti-Rinderpest Serum and Bull Virus was almost negligible. But the demand for Anti-Fowl Cholera Serum and Fowl Cholera Vaccine was considerably on the increase this year inasmuch as 925 doses of the former and 2,300 doses of the latter were supplied this year as against 456 doses and 600 doses respectively in the previous year.

As regards supplies made to places outside the State, it is gratifying to note that the total quantity of the various biological products supplied during the year under report, was much more than that in the preceding year, and that indents were received for the first time during the year from some new places also. Further, some of the States which were already our customers have indented for some new products as well, for the first time during the year, in addition to getting increased quantities of other products which were being got in the previous years.

Further, from the Hyderabad State the demand for Anti-Hæmorrhagic Septicæmia Serum, Anti-Blackquarter Serum and Hæmorrhagic Septicæmia Vaccine was much more, while that for Anti-Rinderpest Serum was a little less than that in the previous year. From the Baroda State there was a demand for 12,000 doses of Anti-Rinderpest Serum as against only 1,000 doses during last year, and besides, 1,400 doses of Anti-Hæmorrhagic Septicæmia Serum were also indented for by that State for the first time during the year under report.

As a result of the introduction of goat virus in Coorg, the demand from that place was over four times that in the previous year, and consequently there was a considerable fall in the supplies under Anti-Rinderpest Serum and Bovine Virus.

Experiments and Research.

Goat Adapted Virus.—Field tests with virulent Bovine Rinderpest Virus to ascertain the further duration of immunity conferred by Goat Rinderpest Virus were conducted on the fourth batch of Amrit Mahal cattle after an interval of 33½ months.

Tissue Vaccine.—Experiments with Goat Spleen Tissue Vaccine were conducted with and without the addition of chemicals in order to study the period of viability.

It may be mentioned here that as far as Mysore State is concerned, Goat Tissue Vaccine is more or less of mere academic interest, as the product in the form of goat blood virus, prepared in this Institute is definitely known to keep potent for at least a week and it can be conveniently supplied to any part of the State within 24 hours to 48 hours.

Besides, in view of the fact that the tissue vaccine is required to be emulsified in normal saline prior to use on the field, it involves the possibility of the material getting contaminated in the process of preparing the emulsion, as strict aseptic precautions cannot always be observed by the field workers with the limited facilities generally available there.

However, this vaccine has also been prepared on an experimental scale and may be made available for issue on a large scale if and when required.

Blackquarter.—Seven more pathogenic strains of Blackquarter were incorporated into the Bacterin prepared in the Institute with a view to make it more polyvalent.

Anthrax.—A sample of " Carbozoo " (Saponised Anthrax Spore Vaccine) was prepared, and experiments for the preparation of a live Spore Vaccine are in progress.

Goat-pox.—Experiments for preparing Goat-pox vaccine were started this year and the results achieved so far are encouraging.

Fowl-pox.—Experiments for the preparation of Fowl-pox vaccine were continued with satisfactory results and the potency tests are in progress. The Fowl-pox Virus was passaged through pigeons and the material was collected for further work.

Rabies Vaccine (Veterinary.)—It is proposed to start early in this Institute the preparation of this vaccine for prophylactic vaccination against rabies in animals.

Revenue and Expenditure.

The total income derived by the sale of biologicals to places outside the State as well as to the Mysore Civil Veterinary Department and also by the sale of done animals, manure, etc., amounts to Rs. 74,000 during the year under report as against Rs. 92,900 in the previous year. The reduction in the rate of Anti-Rinderpest serum from two annas to an anna and a half and the other concessions sanctioned in Government Order No. D. 7363-4—C. V. 82-34-4, dated 5th August 1935, affected the revenue of the Institute to a certain extent. The income from outside the State alone amounted to Rs. 49,000 as against Rs. 42,600 in the previous year. The decrease in revenue during the year under report is also due to the fall in income from the Mysore Civil Veterinary Department in as much as the total value of the products supplied for use within our State during the year works out to only Rs. 39,200 as against Rs. 48,200 in the previous year. This fall in revenue is chiefly due to the general decline in the outbreak of epizootics in our State.

As regards the expenditure, a sum of Rs. 74,900 has been expended during 1935-36 out of the budget grant of Rs. 82,200 as against the total expenditure of Rs. 70,600 in the previous year. The slight increase in the expenditure is due to the purchase of certain special and costly apparatus under ' Apparatus and Chemicals ' during the year. It may be considered as almost a capital expenditure and was mainly on account of the additional laboratory facilities required to be provided in this Institute to Dr. P. M. Narayanaswami Naidu, Assistant Superintendent, Civil Veterinary Department.

General.

As usual, all the biological products prepared in this Institute together with some interesting and instructive demonstration photographs, charts, slides, etc., were exhibited in the Dasara Exhibition held at Mysore during September and October 1935. Besides, the same were arranged to be exhibited in six other exhibitions as well.

Three professional papers were contributed by the staff of this Institute during the year. Lectures on Veterinary subjects were arranged to be delivered to the Co-operative training class.

For the last three years 16 Veterinary graduates from different places underwent short course training in this Institute, including eight candidates selected for training during the year under report.

The working of the Institute was on the whole quite satisfactory.

B. NARASIMHA IYENGAR,
Director of Agriculture.

ANNUAL REPORT OF THE MYSORE SERUM INSTITUTE, HEBBAL, BANGALORE, FOR THE YEAR 1935-36.

INTRODUCTION.

The main work of the Mysore Serum Institute during the year 1935-36 consisted of the preparation of several kinds of Sera and Vaccines required for controlling most of the important contagious diseases of live-stock and poultry such as, Rinderpest, Hæmorrhagic Septicæmia, Blackquarter, Anthrax, Sheep-pox, Fowl Cholera, etc. These biological products were prepared as usual, in sufficiently large quantities to meet fully and promptly all the demands of not only the Mysore Civil Veterinary Department, but also of several other Indian States, *viz.*, Hyderabad, Baroda, Pudukkottai, Cochin, Ramdurg, Ichalkaranji, etc.

In addition to the production of Sera and Vaccines, several investigations and researches were also carried out in the Institute during the year, with a view to improve the efficacy of the biological that were already being issued for field use and also to prepare some more new products required for other diseases.

Although the primary object of this Institute is to prepare and supply the biologicals required for use within our State only, yet it is gratifying to note that the demand for these products during the year under report from places outside the State was even more than that from the Mysore Civil Veterinary Department, inasmuch as that over 3,16,000 unit doses of Sera and Vaccines were supplied to places outside the State as against 2,52,000 unit doses issued to the Mysore Civil Veterinary Department.

An important feature during the year under report was that the Government were pleased to sanction in their Orders No. D. 4991-2—C. V. 40-35-4, dated 14th February 1936 and No. D. 6980-81—C. V. 40-35-15, dated 16th May 1936, my deputation to visit some important Indian States and Biological Institutes in South as well as in North India (including Colombo), as detailed in the margin with a view to acquaint myself with the epizootic diseases occurring in those States, the remedial measures adopted by them, etc., and also to note the working of other Biological Institutes as compared with that of this Institute. As a result of my visit to those places and my personal discussions with the Veterinary Officers concerned, some more States have begun getting their requirements of Sera and Vaccines from our Institute. Further I could introduce some refinements and improvements in the working of the Institute, in the light of what I had noted in other biological Institutes I visited. It is also proposed to start in this Institute the preparation of Rabies Vaccine (Veterinary) for prophylactic vaccination against rabies in animals on the lines adopted in the Pasteur Institutes at Coonoor, Colombo, etc.

South India.—From Bangalore to Coorg—Coonoor (Pasteur Institute and Nutrition Research Institute)—Cochin—Travancore—Pudukkottai—*Colombo* (Veterinary laboratory and the Dairy Farm)—Madras (The King Institute of Preventive Medicine, Veterinary College and its laboratories and the Serum Institute)—Bangalore (return).

North India.—From Bangalore to Hyderabad-Akkalkot—Sangli-Kolhapur—Bombay (Royal Institute of Science, Haffkine Institute, Bacteriological Laboratory)—Bhavanagar—Baroda—Indore—Bhopal—Gwalior—Jaipur—Jodhpur—Bikaner—*Kasauli* (Pasteur Institute)—*Muktesar* (Imperial Institute of Veterinary Research Laboratories)—*Patna* (Veterinary College and its laboratories and dairy farm)—Bangalore (return).

Consequent on the appointment of Dr. P. M. Narayanaswami Naidu, as Assistant Superintendent, Civil Veterinary Department (*vide* Government Notification No. D. 4527—C. V. 18-35-5, dated 27th January 1935), he was also provided in this Institute, as per orders of the Director of Agriculture, with additional laboratory equipment, separate accommodation and other facilities to carry on research work, besides the facilities already afforded to the Assistant Superintendent, Scientific Section, Civil Veterinary Department, for the investigation of Johne's disease among cattle in our State and for carrying on the routine laboratory work of the Mysore Civil Veterinary Department.

As regards the supplies made to the Mysore Civil Veterinary Department it will be observed that there was an increased demand for Hæmorrhagic Septicæmia

Vaccine, Sheep-pox Vaccine and Blackquarter Bacterin during the year, while there was a less demand for Anti-Hæmorrhagic Septicæmia Serum as compared with the supplies of the previous year. As a result of the introduction of Blackquarter Bacterin in preference to Blackquarter Filtrate, in view of the former being found to be more efficacious than the latter, there was no demand for Blackquarter Filtrate during the year from within our State. There was a marked fall in the supply of Goat Virus to the Mysore Civil Veterinary Department, as there was a further appreciable decline in the incidence of Rinderpest in our State. Besides, even the few outbreaks of Rinderpest that occurred among the cattle in some parts of our State were controlled by adopting "Goat Virus alone" inoculations in preference to Serum Simultaneous method and as such the demand for Anti-Rinderpest Serum and Bull Virus was almost negligible. But the demand for Anti Fowl Cholera Serum and Fowl Cholera Vaccine was considerably more this year inasmuch as that 925 doses of the former and 2,300 doses of the latter were supplied this year as against 456 doses and 600 doses respectively in the previous year.

As regards the supplies made to places outside the State, it is gratifying to note that the total quantity of the various biological products supplied during the year under report, was much more than that in the preceding year, and that indents were received for the first time during the year from some new places also, *viz.*, Ramdurg, Mr. Khanji Bai of Nanrajkot, Mr. K. R. S. Iyer of Bombay, Mr. K. R. Patel of Kalol, etc. Further, some of the States which were already our customers have indented for some new products as well, for the first time during the year, as detailed in Appendix XV, in addition to getting increased quantities of other products which were being got in the previous years.

From the Hyderabad State the demand for Anti-Hæmorrhagic Septicæmia Serum, Anti-Blackquarter Serum and Hæmorrhagic Septicæmia Vaccine was much more, while that for Anti-Rinderpest Serum was a little less than that in the previous year. From the Baroda State there was a demand for 12,000 doses of Anti-Rinderpest Serum as against only 1,000 doses during last year, and besides 1,400 doses of Anti-Hæmorrhagic Septicæmia Serum were also indented for by that State for the first time during the year under report.

As a result of the introduction of Goat Adapted Virus in Coorg, the demand for Goat Virus from that place was over four times that in the previous year, and consequently there was a considerable fall in the supplies under Anti-Rinderpest Serum and Rinderpest Bovine Virus.

Thus it may be stated with confidence that the Sera and Vaccines of this Institute are gaining more and more popularity even in places outside the State. In spite of the considerable fall in the indents received from the Mysore Civil Veterinary Department and also the appreciable reduction in the rate of Anti-Rinderpest Serum from two annas to one and a half anna per dose with effect from 1st April 1935 in order to keep it on par with the reduced rate obtaining in the Madras Serum Institute, it is gratifying to note that the working of the Institute, during the year under report from a financial point of view, was also satisfactory inasmuch as that there was a total revenue of Rs. 74,900 as against an expenditure of Rs. 63,900, excluding that incurred to the extent of Rs. 11,000 in purchasing special and costly apparatus and chemicals for providing additional laboratory facilities to Dr. P. M. Narayanaswami Naidu, Assistant Superintendent, Civil Veterinary Department—this unusually heavy investment being considered as almost a capital expenditure.

The following experiments were conducted in respect of the preparation of Biological products:—

Goat Adapted Virus.—Field tests with virulent Bovine Rinderpest Virus to ascertain the further duration of immunity conferred by Goat Rinderpest Virus were conducted on the 4th batch of Amrit Mahal Cattle after an interval of 33½ months.

Tissue Vaccine.—Experiments with Goat Spleen Tissue Vaccine were conducted with and without the addition of chemicals in order to study the period of viability.

Blackquarter.—Seven more pathogenic strains of Blackquarter were incorporated into the Bacterin prepared in the Institute with a view to make it more polyvalent.

Anthrax.—A sample of "Carbozoo" (saponised Anthrax Spore Vaccine) was prepared, and experiments for the preparation of a Live Spore Vaccine are in progress.

Goat-pox.—Experiments for preparing Goat-pox vaccine were started this year and the results achieved so far are encouraging.

Fowl-pox.—Experiments for the preparation of Fowl-pox Vaccine were continued with satisfactory results and the potency tests are in progress. The Fowl-pox Virus was passaged through pigeons and the material was collected for further work.

Rabies Vaccine (Veterinary).—It is proposed to start early in this Institute the preparation of the Vaccine for prophylactic Vaccination against rabies in animals.

As usual all the biological products prepared in this Institute together with some interesting and instructive demonstration, photographs, charts, slides, etc., were exhibited in the Dasara Exhibition held at Mysore during September and October 1935. Besides, the same were arranged to be exhibited in several other exhibitions as well, *viz.*—

1. Health Exhibition held at the Intermediate College, Bangalore.
2. The Indian Empire Exhibition held at Basavangudi.
3. The Central College Diamond Jubilee Exhibition.
4. Ghati Subramanyam Jatra.
5. Village Museum, Y.M.C.A., Dodballapur.
6. The Exhibition at Devanhalli.

Three professional papers were contributed by the staff of this Institute during the year. Lectures on Veterinary subjects were arranged to be delivered by Mr. G. N. Srikantiah, Veterinary Inspector, to the Co-operative training class, as the Superintendent, who had to deliver the lectures as per original programme, was away from headquarters on deputation.

II. ADMINISTRATION.

I was in charge of the Institute throughout the year under report excepting for short periods from 1st March 1936 to 29th March 1936 and 16th June 1936 to 31st July 1936 (inclusive) when I was on deputation to visit some of the important States and Biological Institutes in India.

Mr. P. U. Nayar, continued to be the Bacteriological Assistant throughout the year and was also acting Superintendent of the Institute during my absence on deputation. He was on privilege leave for one month and 26 days from 8th July 1935 during which period the Senior Veterinary Inspector in the Institute was attending to the absentee's work in addition to his own.

As Mr. N. R. Srinivasa Iyengar, the Senior Veterinary Inspector in the Institute, was promoted to the Gazetted rank and appointed as Assistant Superintendent, Mysore Lancers, he was relieved of his duties in this Institute on the afternoon of the 5th September 1935, and a Veterinary Inspector from the Mysore Civil Veterinary Department, was appointed in his vacancy.

III. STAFF.

The Staff of the Institute at the close of the year was as follows :—

VETERINARY SECTION.

(1) Six Veterinary Inspectors and eleven Salustries.

OFFICE SECTION.

(2) One Head-Clerk, one Head-Accountant and five Clerks.

LABORATORY SECTION.

(3) One Mechanic, two Laboratory Attendants, one Media-man and one Serum Room Attendant.

PACKING SECTION.

(4) One Carpenter and one Packer.

MENIAL STAFF.

(5) One Maistry, 63 Cattlemen, five Peons, two Watchmen and six Thoties.

In this connection it may be stated that as the posts other than of Veterinary Inspectors carry only fixed pay in this office, affording practically no scope for any increase in their emoluments, proposals have been submitted to the Director of Agriculture for favour of converting them into time scale ones as in other offices, so as to avoid undue stagnation of the incumbents of this office and also to give them an impetus to work harder with continued zeal and with a feeling that their earnest work does not go unrecognised and unrewarded. It is believed that these proposals will be considered favourably.

IV. BUILDINGS.

The present thatched cattle sheds which are almost like temporary fixtures have been found to be very unsatisfactory in view of the fact that some of the roofings are occasionally blown off due to heavy winds and sometimes collapse on account of heavy rains causing much anxiety to the staff and damage to the health of the animals and also necessitating heavy recurring expenditure towards repairs. It is therefore found very necessary to rebuild the cattle sheds on a permanent basis with Mangalore tiled roofing as has already been proposed and pressed for in the previous years. Although this is an urgent and important item of work, it has not been possible to be carried out so far due to want of sufficient and specific funds. However it is hoped that this work will be taken on hand as early as possible.

Another important item of work deserving urgent consideration is the construction of Residential quarters to the Officers as well as to the staff of this Institute, particularly in view of the fact that the Institute is situated in an out of the way place, far away from the City. These proposals are already under the consideration of Government and it is believed that they will be viewed favourably.

V. CULTIVATION.

With a view to minimise the expenditure under "Feeding charges" and also to get fresh green fodder for feeding the animals of this Institute, some portions of the land belonging to the Institute were brought under cultivation as in the previous years, by employing the labour of this Institute alone, during their spare moments, without incurring any extra cost on this account. By so doing, it was possible to grow during the year under report about forty-six tons of green jola, 5,022 lbs. of lucerne, 1,388 lbs. of radish, 680 lbs. of cabbage leaves and 1,022 lbs. of greens, etc., of the aggregate value of about Rs. 800.

VI. ANIMALS.

All the animals required for production of Sera and Vaccines as well as for tests were purchased, as in previous years, from contractors on "Tender" system and the "done" animals were also disposed of, as and when available similarly.

The breeding of small experimental animals such as guinea-pigs, rabbits, etc., which had been undertaken as a measure of economy and convenience, was continued this year also with great success and out of these animals, 65 rabbits and 73 guinea-pigs were used for different tests and experiments in this Institute inclusive of those supplied to Dr. P. M. Narayanaswami Naidu, Assistant Superintendent, Civil Veterinary Department.

The details of animals used during the year under report for production of several biologicals and for different tests and experiments are as follows:—

81 Fresh he-buffaloes for preparing Anti-Rinderpest Serum.
1 Fresh he-buffalo for preparing Anti-Fowl Cholera Serum.
25 Discontinued rinderpest serum makers for the production of Anti-Haemorrhagic Septicæmia serum.

25 Discontinued rinderpest serum makers for preparing Anti-Anthrax serum.
274 Fresh buffalo bull calves for preparing Rinderpest Virus as well as for conducting tests.
24 Bull calves solely for experiments.
350 Goats for preparing "Goat virus" and for conducting experiments.
46 Sheep for preparing "Sheep-pox vaccine" and for experiments.
193 Birds and 138 Laboratory animals for different tests and experiments.

During the year under report there were only three deaths among the serum producers as against twenty-three in the previous year.

VII. PRODUCTION AND ISSUE OF BIOLOGICAL PRODUCTS.

Rinderpest Bovine Virus.—As a result of the introduction of "Goat Virus" inoculation in our State in place of Sero-Virus Simultaneous method for protection of cattle against Rinderpest there was practically no demand for Rinderpest Bovine Virus from the Mysore Civil Veterinary Department during the year under report. Besides, for the same reason the demand for this product from Coorg was also comparatively very much less this year and the production of this Virus had also therefore to be very much reduced (*viz.*, by about 80 per cent) as compared with that of the previous year.

Irrespective of the demand for this virus, some animals had however to be inoculated at intervals merely for maintaining the strain of virus in the Institute.

Thus as against 402 buffalo bull calves used and 64,400 doses of virus produced during the previous year, (one c.c. being the unit dose) only 148 calves were used and 10,575 doses were produced during the year under report. Out of 148 buffalo bull calves used, 49 calves were rejected as non-reactors (*i.e.*, as not showing typical symptoms of the disease in time) as against 45 calves rejected last year for the same reason.

During the year under report 325 doses of this virus were supplied to Coorg and 75 doses to the Mysore Civil Veterinary Department. Besides, 150 doses were supplied to Ramdurg for the first time during the year, and 75 doses were used in the Institute for experimental purposes.

Rinderpest Goat adapted Fixed Virus.—During the year under report, 330 he-goats were used and 14,835 c.c. of virus were produced as against 367 he-goats and 26,820 c.c. of virus during the previous year. Owing to an appreciable further decline in the incidence of Rinderpest in our State, the demand for this virus from the Mysore Civil Veterinary Department was considerably less, and as such only 1,470 c.c. were supplied this year as against 5,070 c.c. in the last year. But the indents received from outside the State were however on the increase. As against only 210 c.c. of Goat Virus supplied to Coorg, in the preceding year, 930 c.c. were supplied this year: and for the first time during the year under report, indents were received from Ramdurg and Baroda for 225 c.c. and 30 c.c., respectively.

Anti-Rinderpest Serum.—Since the efficacy of Goat Adapted Virus as a single Vaccine for effective control of Rinderpest, has been well established, and also in view of the fact that "Goat Virus alone" inoculations are much cheaper and less cumbersome than Serum Simultaneous method of inoculations, the Mysore Civil Veterinary Department, have abandoned the latter method completely and have adopted the "Goat Virus alone" method in cases of all outbreaks of Rinderpest. Consequently, there was very little demand for Anti-Rinderpest Serum from within the State. However the demand for the same from places outside the State continued to be nearly as large as in the preceding year. While the total indents received from within the State were only for 6,500 doses, the same from places outside the State were for 1,90,000 doses as against 6,350 doses and 2,03,000 doses respectively during last year. Thus it may be stated that anti-rinderpest Serum is now being prepared in this Institute mostly in order to meet the demands from outside the State alone, although this Institute was started with the main object of preparing this serum only in addition to Bull Virus required for use in our State for carrying on Serum Simultaneous inoculations. However the present fall in the demand for Anti-rinderpest Serum from within the State is due to the fact that Rinderpest has been almost eradicated from our State by the effective methods of control and the few outbreaks that may occur in any part of our State can be combated successfully by adopting the latest "Goat Virus alone" method.

During the year under report, 81 he-buffaloes were used and 1,69,700 doses of Anti-rinderpest Serum were prepared (5 c.c. being the unit dose) as against 115 he-buffaloes and 1,50,450 doses in the previous year. As there were already 81,800 doses of this serum on hand at the commencement of the year, there were altogether 2,51,500 doses available for issue. Out of this 1,65,000 doses were supplied to Hyderabad, and 5,000 doses to Coorg as against 1,90,000 doses and 12,000 doses respectively during last year, the fall in demand from Coorg being due to the introduction of Goat Virus in that Province as well. But 12,000 doses were supplied to Baroda this year as against only 1,000 doses in the previous year. Besides, indents were received for the first time during the year for 3,300 doses of Anti-Rinderpest Serum from Ramdurg State and for 4,500 doses from Mr. K.R.S. Iyer of Bombay. Indent for 100 doses from Kalol (North Gujarat) and another for a similar quantity from Nanrajkot were also received for the first time this year.

Anti-Haemorrhagic Septicæmia Serum.—As there was a large stock (*viz.*, 1,02,520 doses) of this serum on hand at the commencement of the year, only 25 discontinued Rinderpest Serum makers were used and 23,000 doses of this serum were prepared (15 c.c. being the unit dose) as against 99 Serum makers used and 1,20,920 doses prepared in the preceding year. As a result of conducting timely preventive inoculations with Hæmorrhagic Septicæmia Vaccine which was used on a much larger scale, there was a decrease in the demand for the serum from the Mysore Civil Veterinary Department, and as such only 18,720 doses of this serum were issued during the year for use within the State as against 24,760 doses supplied during the preceding year. But the demand for this serum from outside the State was more than that in the previous year by about 50 per cent. To Hyderabad alone, 53,000 doses were supplied this year as against 39,000 doses last year. From Cochin also indents were received this year for 1,940 doses as against only 800 doses in the previous year. Besides 1,400 doses were supplied to Baroda, 100 doses to Pudukkottai, 320 doses to Mr. K. R. S. Iyer of Bombay, and 300 doses to the Civil and Military Station, Bangalore, for the first time during the year.

Anti-Blackquarter Serum.—No Anti-Blackquarter Serum was required to be prepared during the year under report, as there was a large stock of the same (*viz.*, 68,340 doses) remaining on hand as opening balance out of the quantity prepared towards the end of the previous year, and also as the demand for this product from within the State was very much less owing to an extensive use of Blackquarter Bacterin as a prophylactic. Only 5,280 doses were indented for this year by the Mysore Civil Veterinary Department as against 15,000 doses in the preceding year (15 c.c. being the unit dose). But the demand from places outside the State rose to 13,040 doses from 8,720 doses only in the previous year. Twelve thousand doses were supplied to Hyderabad, 960 doses to Pudukkottai and 80 doses to Ichalkaranji as against 8,000 doses, 600 doses and 120 doses respectively in the last year.

Anti-Anthrax Serum (Bovine).—As there was a large stock of this serum remaining on hand at the commencement of 1934-35 out of the previous year's production, there was no need to prepare any more of this serum that year (*i.e.*, 1934-35.) But as the stock of the same ran short gradually and as the demand therefor during the year under report happened to be even slightly greater than that in the previous year, it was found necessary to replenish the stock during the year. Hence by making use of 25 he-buffaloes, discontinued from Rinderpest Serum production, 26,360 doses of Anti Anthrax Serum were prepared (15 c. c. being the unit dose) and added on to the stock of 23,000 doses remaining on hand at the beginning of the year. Out of the total stock of 49,360 doses of this serum 23,660 doses were supplied to the Mysore Civil Veterinary Department, 1,000 doses to Hyderabad and 20 doses to Cochin as against 20,560 doses 2,000 doses and 400 doses supplied respectively, in the previous year.

Anti-Fowl Cholera Serum.—One discontinued rinderpest Serum maker was immunised for the preparation of Anti-Fowl Cholera Serum and 2,050 doses (3 c. c. being the unit dose) were prepared during the year under report. As this product is proposed to be still tested on the field on an extensive scale, it is being supplied free of cost to the Mysore Civil Veterinary Department as well as to places outside the State for trial on the field. Accordingly 800 doses were issued to places within the State as against 450 doses in the previous year. Coorg and Cochin were supplied with 50 doses each and Ceylon with 25 doses for the first time during the year. The reports received so far are very encouraging.

Hæmorrhagic Septicæmia Vaccine.—As the demand for Hæmorrhagic Septicæmia vaccine from within as well as from outside the State had further increased, it had to be prepared in much larger quantities and consequently 1,03,100 doses (5 c. c. being the unit dose) of the vaccine were prepared during the year as against 83,300 doses last year. Thus there was a total quantity of 1,15,700 doses of this vaccine available for issue during the year under report including the balance of 12,600 doses remaining at the commencement of the year. The Mysore Civil Veterinary Department indented for 62,950 doses of this vaccine as against 44,450 doses in the preceding year. There was a demand for 39,000 doses from Hyderabad and for 6,000 doses from Baroda, as against only 25,000 doses and 5,500 doses respectively, in the previous year. To Pudukottai 100 doses of the vaccine were supplied this year for the first time and 200 doses were used in the Institute for tests and experimental purposes.

Blackquarter Bacterin.—This is another product for which the demand had increased considerably. During the year under report, 73,900 doses of Blackquarter Bacterin were prepared as against 82,650 doses in the last year. As there was already on hand a stock of 29,250 doses in the beginning of the year, a total quantity of 1,03,150 doses were available for issue during the year under report. Although this Bacterin was introduced only in the latter part of 1933-34 for field use on an extensive scale, yet it has been found to be so efficacious that it has completely replaced Blackquarter Filtrate in our State and the demand for Blackquarter Bacterin during the year from the Mysore Civil Veterinary Department rose up to 83,600 doses as against 56,800 doses in the previous year, and only 1,200 doses in the year preceding that. Pudukottai also indented for 600 doses as against only 100 doses in the last year.

Blackquarter Filtrate.—As Blackquarter Bacterin was definitely proved to have a better antigenic value than Filtrate as already stated above, the former alone was used in our State in preference to the latter, and as such there was little demand for Filtrate from the Mysore Civil Veterinary Department during the year under report. Consequently it was not found necessary to prepare large quantities of this product as in previous years. Besides, as there were already 6,800 doses of filtrate remaining on hand as opening balance, only 10,400 doses were prepared during the year so as to have a stock just sufficient to meet the possible demands from places outside the State only. Seven thousand doses of this product were supplied to Hyderabad and 350 doses to Pudukottai as against 7,000 and 400 doses respectively, during the previous year.

Sheep-pox Vaccine.—In order to meet the increased demand for this product from the Mysore Civil Veterinary Department, its output had to be further increased this year and as such 25 sheep were used and 48,673 doses (one c. c. being equal to 100 doses) were prepared as against 13,998 doses in the previous year. The Mysore Civil Veterinary Department was supplied with 49,350 doses and Pudukottai with 400 doses of the vaccine as against 12,100 doses and 800 doses respectively, in the preceding year.

Fowl Cholera Vaccine.—This being a new product prepared in this Institute it is supplied free of cost for extensive trial on the field and the demand for this product is also on the increase both from within and outside the State. Hence 6,200 doses of this vaccine were prepared and 1,960 doses were supplied to several places within the State as against 3,200 doses prepared and 600 doses supplied during the previous year. Indents were received from Coorg and Cochin also for 550 and 50 doses respectively, for the first time during the year under report.

VII. EXPERIMENTS AND RESEARCH.

Routine Bacteriology and Pathology.—As in previous years, the routine bacteriological work consisted of the examination of various smears, conducting of sterility tests of Bovine and Goat Adapted Rinderpest Virus, Sera and Vaccines, and determination and exaltation of virulence of the strains of Blackquarter, Hæmorrhagic Septicæmia, Anthrax, Fowl Cholera, etc., in addition to the usual maintenance of stock cultures and preparation of various antigens for purposes of immunisation and tests.

During the year under report, 375 samples of Rinderpest Virus, both Bovine and Goat Adapted, 104 samples of Sera and Vaccines and 169 samples of materials of a miscellaneous nature were subjected to cultural tests, both ærobic and anærobic. Besides, pH estimation of eight samples of Sera and 137 samples of culture media was also done.

Details of smears examined.

Anthrax	...	...	...	...	39
Blackquarter	...	...	...	...	251
Pasteurellæ	...	...	...	...	579
Protozoa	...	...	...	...	419
Miscellaneous	...	...	...	...	490
			Total	...	1,778

Pathology.—Routine work in Pathology was mainly confined to systematic post-mortem examination of all animals and birds that died in the Institute as a result of tests, experiments and otherwise. A few more specimens of pathological interest and also some more helminths were collected and added on to the museum of the Institute during the year.

Details of post mortem examinations.

In all 510 autopsies were conducted during the year as against 693 in the preceding year.

Kind of animal.					*Number examined.*
Buffaloes		...	...	...	9
Buffalo bull calves		...	...	...	137
Bull calves		...	...	...	100
Goats	...	...	...	...	11
Sheep	...	..	...	...	4
Bullock	.	...	...	..	1
Small animals (Rabbits, Guinea-pigs, White rats, etc.)				...	124
Poultry	...	...	...	...	124
			Total	...	510

Out of the 510 post mortum examinations conducted, as detailed above, 99 were diagnosed for Rinderpest, 24 for Hæmorrhagic Septicæmia, 51 for Blackquarter, 12 for Anthrax, and 32 for Fowl Cholera. The other 292 deaths were attributable to diseases other than those mentioned above.

Rinderpest.

Bovine Virus.—The strain of Bovine Virus maintained in the Institute was kept up by passaging through buffalo calves, and it was subjected to 69 passages during the year. One hundred and forty-four buffalo bull calves were used for the purpose out of which 94 calves reacted satisfactorily with a mortality of 65 per cent.

Goat Virus.—Two strains of fixed Virus (Institute and Muktesar) were being maintained until recently; but as there was practically no difference between the two in their behaviour and virulence, or antigenic value, and as it was unnecessarily involving double the number of goats for maintaining the strains separately, both of them were mixed up into one. This mixed Virus was subjected to 13 passages by the end of the year and it is found to give satisfactory results. The strains of the Institute and the Muktesar had been passaged 86 and 87 times respectively during the year before mixing them up, the total number of passages the strains had been subjected to from the beginning being 278 and 320 respectively.

Two tests on Bovines for antigenic value were conducted in the Institute with the Virus twice during the year, the first being with the two strains separately and the second with the mixed strain, with similar and quite satisfactory results.

Three hundred and thirty goats were used for the production and for the maintenance of the strain of Virus during the year, and 70 per cent of them reacted satisfactorily with a mortality of 34 per cent.

Field Experiments with Goat Virus.—A fourth batch of 25 head of cattle out of 213 belonging to Amrit Mahal herd No. 3, which had been protected against Rinderpest when they were of age ranging from one to five years with Goat Virus alone during February 1933, were tested with virulent Bovine Virus at Birur during December 1935, *i.e.*, after an interval of two years 9½ months. The period of daily observation for ten days was uneventful excepting that one animal (1932 born) showed a slight rise in temperature, *i.e.*, 103° F and 103·4° F only on the 7th and 8th day respectively but which later subsided. On examining the blood smears of the animal they failed to show any protozoon affection. Three bull calves were kept as controls at the scene of the experiment at Birur. Two of them took the infection in a severe form showing all the typical symptoms of Rinderpest. But the third one had only a mild reaction and recovered.

In the light of the tests so far conducted it is thus seen that Goat Virus as a single vaccine confers an immunity on Bovines, solid enough to withstand a test, with virulent Bovine Virus upto 33½ months. Another batch from the herd will be taken up in due course for inoculation with virulent Bovine Virus to ascertain the further duration of immunity by Goat Blood Virus.

Tissue Vaccine.—During 1933-34 some experiments were conducted with Spleen Tissue Vaccine, prepared out of spleen exterpated at the height of reaction from goats infected with Rinderpest. Two samples were prepared, one with Phenol as a preservative and the other with formalin. The phenolised vaccine, preserved in cold storage up to 34 days conferred a solid immunity while the formalinised one proved a failure. Therefore, in continuation of the above, a few further experiments were conducted during the year. Different samples of vaccine with glycerine, chloroform and formalin as preservatives and mere spleen tissue one per cent in 0·5 per cent saline were used for the experiments. The glycerinised vaccine and the spleen tissue alone in 0·5 saline gave fairly satisfactory results. Though the latter method is supposed to be the method of choice of the day advocated by many workers in India, some more experiments are considered necessary on different aspects, particularly in respect of the solidity and longevity of immunity conferred by this product, before the vaccine is issued for field use on a large scale.

However, it may be mentioned here, that as far as Mysore State is concerned, Goat Tissue Vaccine is more or less of mere academic interest, as the ready and reliable product in the form of Goat Blood Virus, prepared in this Institute, is definitely known to keep potent for at least a week and as it can be conveniently supplied to any part of the State within 24 to 48 hours. Further as the incidence of Rinderpest has considerably declined in our State and as the blood virus drawn out of the goats used for the mere maintenance of the fixed strain of the virus alone, is enough to meet the present demands from the Mysore Civil Veterinary Department, it is found neither desirable nor necessary nor profitable at any rate at present to prepare Goat Tissue Vaccine in this Institute by infecting some more goats with fixed Goat Blood Virus and killing them at the height of reaction in order to get their spleens for making this product. Besides, in view of the fact that the tissue vaccine is required to be emulsified in normal saline prior to use on the field, it involves the possibility of the material getting contaminated in the process of preparing the emulsion, as strict aseptic precautions cannot always be observed by the field workers with the limited facilities generally available there.

In these circumstances it may be said that it is advantageous to adopt for the present, Goat Blood Virus method alone in our State in preference to the goat tissue vaccine.

However, Spleen Tissue Vaccine has also been prepared in this Institute on an experimental scale and may be made available for issue on a large scale if and when required.

Anthrax.—Experiments in connection with Anthrax were confined to testing of the Pathogenicity of the different strains, and testing and standardisation of samples of spore vaccine. Three virulent and two avirulent strains of Anthrax were maintained. During the year under report, another avirulent strain evolved from Australian spore vaccine was added on to the stock cultures. One brew of

Anti Anthrax Serum was prepared from bovines and tested for potency on sheep. Thirty c.c. and fifty c.c. of this Serum were given to a group of three animals with one m.l.d. (0·0000000001 c.c.) of virulent culture to each and two controls were kept. Both the controls died of Anthrax while all the test animals withstood the infection.

Four tests were conducted with the spore vaccine on guinea-pigs, rabbits and sheep, but as the results, though encouraging, were not uniform, some more tests have to be done before it can be issued for general field use.

A sample of saponised Anthrax Vaccine (Carbozoo) has also been prepared and it is to be tested.

Hæmorrhagic Septicæmia.—Four strains of Hæmorrhagic Septicæmia culture (local, Madras, Muktesar and National Collection of Type cultures, Lister Institute, London) were maintained by sub-culturing and by periodical passages through bovines. 0·1 c.c. and 0·01 c.c. of broth culture proved fatal to buffalo calves and rabbits, respectively.

Seven brews of Hæmorrhagic Septicæmia Vaccine were prepared during the year and tested on buffalo calves and rabbits with good results.

Fowl Cholera.—Four strains of Pasteurella avisepticus, both local and foreign were maintained. On testing all the strains for pathogenicity on fowls and pigeons, the foreign one (National Collection of Type Cultures, Lister Institure, London) was found to be most virulent and 0·001 c.c. and 0·02 c.c. of this proved fatal to fowls and pigeons, respectively.

Five brews of Fowl Cholera Vaccine incorporating all the four strains, were prepared and tested for safety and potency with good results. Field tests with the vaccine are also reported to be encouraging.

One brew of Anti Fowl Cholera Serum was also prepared during the year and it is being issued for field use.

Blackquarter.—There were 72 different samples of Blackquarter at the beginning of the year and eight more were received this year six from the Veterinary Inspectors of the State, one from South Africa and the other from Germany. On testing these 8 new strains, all of them excepting one received from the Veterinary Inspectors of the State, were found quite virulent for animals; and they were added on to the collection, making a total of 79 samples, for use in the preparation of Bacterin.

For ascertaining the minimum lethal dose of Blackquarter for potency tests a strain of Blackquarter received from the Madras Veterinary College was used on bovines and guinea-pigs and it has been found that 1·5 c.c. of the culture kills the former and 0·003 c.c. the latter.

Tests for virulence of stock cultures.—Half a dozen strains of different cultures of Blackquarter including strains received from South Africa, Lister Institute, London and Germany were tested for virulence on bovines, sheep and guinea-pigs, and all of them were found virulent enough to produce typical Blackquarter with a high percentage of mortality.

Blackquarter Bacterin (Vaccine).—Seven brews of Blackquarter Bacterin (Vaccine) incorporating both foreign and local strains, were prepared during the year, and they were tested for safety and potency on bovines and guinea-pigs.

The seasonal recurrence of Blackquarter in the Cattle Breeding Station, Ajjampur, was completely checked by the systematic biannual inoculation of the young stock with the Bacterin. In all 375 young animals of the Cattle Breeding Station were inoculated with the Bacterin during the year under report.

Sheep-pox.—The strain of Sheep-pox Virus maintained in the Institute was subjected to 16 passages from 1931-32 up to the end of the year under report and it continued to be virulent. Some material from a case of natural outbreak of sheep-pox was collected from Dodballapur area during the year and a batch of three sheep was infected. The "Takes" were quite good in all the three animals and the material scraped from them was made use of for the preparation of vaccine. Out of 31 sheep used during the year for the preparation of the vaccine 84 per cent of them developed satisfactory "Takes" and yielded a sufficient quantity of material.

Virility of Pox Virus.—It had been observed during the last year that the material preserved in 1:3 glycerine and kept in the cold storage for seven months and 11 days had been found to be virulent on test. Another experiment in this connection was undertaken during the year under report with a sample of material collected from a case of natural attack of pox in the Institute, and preserved in 1:3 glycerine in the cold storage for a period of 11 months. Three sheep were used for testing the material and all of them took the infection only in a mild form resembling the reaction after vaccination, indicating thereby that the virus had undergone some attenuation.

Goat Pox.—Two samples of goat-pox material got from Tiptur and Closepet were tried on goats and only the sample from the latter place gave rise to a form of a typical pox. But on subsequent passages to another goat and a sheep, no reaction was observed.

Cow-pox.—A sample of cow-pox material collected from a cow affected with cow-pox was sent to this Institute by the Veterinary Inspector, Bangalore. This was infected to two calves, but only one of them developed the disease and the material from the same has been collected and preserved. A small quantity of the material was sent to the Superintendent, Vaccine Institute, Bangalore, for use in the preparation of lymph for vaccination against small-pox.

Fowl-pox.—Fowl-pox virus was collected from naturally affected birds during a few outbreaks of the disease in the State and two strains of the virus were got from Vienna and Berlin. These strains were first passed through fowls to ascertain their virulence. The preparation of fowl-pox vaccine was undertaken by passages of the virus through pigeons. Two batches of chickens were vaccinated with the fowl-pox vaccine (fowl-pox virus attenuated by passaging through pigeons) for testing its potency, but unfortunately an outbreak of fowl-pest as in the previous year killed all the protected birds, necessitating further work to be resumed next year.

IX. REVENUE AND EXPENDITURE.

The total income derived by the sale of biologicals to places outside the State as well as to the Mysore Civil Veterinary Department and also by the sale of done animals, manure, etc., amounts to Rs. 74,900 during the year under report as against Rs. 92,900 in the previous year. The reduction in the rate of Anti Rinderpest Serum from two annas to an anna and a half and the other concession sanctioned in Government Order No. D. 7363-4—C. V. 82-34-4, dated 5th August 1935 affected the revenue of the Institute to the extent of nearly Rs. 15,000. Otherwise the Institute would have realised a revenue of about Rs. 90,000 this year also the income from outside the State alone amounting to Rs. 49,000 as against Rs. 42,600 in the previous year. Thus it is seen that the decrease in revenue during the year under report is solely due to the fall in income from the Mysore Civil Veterinary Department in as much as that the total value of the products supplied for use within our State during the year, would work out to only Rs. 39,200 as against Rs. 48,200 in the previous year (as detailed in Appendix XVI). However as the quantity of Anti-Rinderpest Serum purchased by the Mysore Civil Veterinary Department during the year was very little, the reduction in the rate of that product did not affect the revenue of the Institute to any appreciable extent. This fall in revenue is therefore chiefly due to the general decline in the outbreak of epizootics in our State. Moreover as the Mysore Civil Veterinary Department undertook timely inoculations with vaccines in preference to sera as a more economical and effective measure of preventing contagious diseases of cattle, there was a drop in the demand for sera which are costlier than vaccines, and thus it had an adverse effect on the revenue of the Institute.

It is however gratifying to note that although there is a fall in revenue due to the reasons explained above, the total quantity of the various biologicals supplied to places outside the State during the year under report is considerably more than that in the previous year.

As regards the expenditure, a sum of Rs. 74,900 has been expended during 1935-36 out of the budget grant of Rs. 82,200 as against the total expenditure of Rs. 70,600 in the previous year. The slight increase in the expenditure is mainly due to the purchase of certain special and costly apparatus to the extent of

Rs. 11,000 under "Apparatus and Chemicals" during the year, as against the expenditure of only Rs. 3,100 under the same head in the previous year. This unusually heavy investment, which may be considered as almost a capital expenditure, was mainly on account of the additional laboratory facilities required to be provided in this Institute to Dr. P. M. Narayanaswami Naidu, Assistant Superintendent, Civil Veterinary Department.

Thus it may however be stated that the working of the Institute from a financial point of view is also very satisfactory in spite of certain unfavourable factors such as the reduction in the rate of Anti Rinderpest Serum on the one hand, and the purchase of some special and costly apparatus, etc., on the other.

X. GENERAL.

Education.—For the last three years 16 Veterinary graduates from different places, underwent short course training in this Institute, the following being the candidates selected for training during the year under report :—

1. Mr. V. Santiago, G.M.V.C., (Malaya States).
2. ,, S. Atchutha Rao, G.V.Sc., (Mysore State).
3. ,, S. Sakharama Rao, G.V.Sc., do
4. ,, A. Sundara Murthy, G.V.Sc., do
5. ,, K. S. Ramaswamy, G.V.Sc., do
6. ,, U. D. Raghunatha Rao, G.B.V.C., do
7. ,, K. S. Srirangachar, G.V.Sc., do
8. ,, C. T. C. Menan, G.V.Sc., (Cochin State).

Visitors.—It may not be out of place to mention here that the importance and usefulness of the Institute has been fairly well established and it has become a place of not only of scientific interest but also of much general interest, attracting every year several distinguished visitors, both official and non-official, from within as well as from outside the State.

Amin-ul-Mulk Sir Mirza Mohamed Ismail, K.C.I.E., O.B.E., Dewan of Mysore, and Mr. N. Madhava Rau, B.A., B.L., Second Member in Council were pleased to visit this Institute during the year under report.

Dr. Sir K. P. Puttana Chetty, Sir Purushotham Doss Thakur Doss, Sir T. Vijayaraghava Charya and members of the South Indian Association including Dr. Sir C. V. Raman, Dr. Fowler, *Sastravaidyapravina* Dr. S. Subba Rao, Dr. C. B. Rama Rao, etc., were also pleased to visit the Institute and to go round all the sections.

The following were some of the other distinguished visitors to this Institute during the year under report :—

1. Dr. C. R. Fay, Reader in Agriculture, Cambridge University.
2. Mr. B. C. Burt, Officiating Vice-Chairman, Imperial Council of Agricultural Research.
3. Dr. Md. Hafiz Syed, M.A., Ph.D., D. Litt., University of Allahabad.
4. Diwan Bahadur N. N. Iyengar, Chief Engineer, with other members of the Mysore Engineers' Association.
5. Dr. Mirchandani, Agricultural Chemist, Behar and Orissa.
6. Mr. S. A. Venkataraman, I. C. S., Collector of Chittoor.
7. Rajakumar Mon Singh of Banera, BAR.-AT-LAW, (Mewar).
8. Mr. Adi K. Sett, Hon. Personal Assistant to the Dewan of Mysore.
9. Mr. M. C. Cherian, Government Entomologist, Madras.
10. Raibahadur Manga Ram, Finance Member, Khairpur State.
11. Mr. S. Ashfague Hussain, Professor in Ajmeer Mayo College.
12. Mr. Krishna Warriar, Superintendent of Agriculture, Trichur.
13. Mr. Syed Ariffuddin, Superintending Engineer, Hyderabad.
14. Mr. Taj Peeran, Retired Deputy Commissioner, Bangalore.
15. Dr. S. Sanjeeva Rao, M.A., Ph.D., Professor of Chemistry, Central College, Bangalore.
16. Mr. M. G. Mehkri, Registrar of Co-operative Societies in Mysore, Bangalore.
17. The Superintendent, Imperial Dairy Farm, Bangalore, with his students.
18. Some Professors and students of the Agricultural College, Coimbatore.

Pro. Mehta of the Baroda College with his students.

20. Mr. C. J. Fernandez, Chief Veterinary Officer, Junagadh State. (Now the Director of Animal Husbandry, Jodhpur State).
21. Mr. Louis Bromfield, Novelist, France, with his Secretary Mr. Hakins.
22. Miss Cooke, New York.
23. Mr. E. J. Henning, Science Department, South India Training School of Seventh Day. Adventists, with his students.
24. Dr. J. C. Kumarappa, M.A., Ph.D.

Acknowledgments.—Before concluding this report I take this opportunity to thank all those officers of the Agricultural, Live-Stock and Civil Veterinary Department, who kindly co-operated in the work of this Institute during the year. My thanks are also due to all those officers both in and outside India who kindly arranged to send their publications and the Annual Reports of their departments in exchange for the Annual Reports of this Institute. I am very much obliged to all the officers whom I interviewed during my recent visit on deputation, to several States in India, for their continued kindness and courtesy towards me and for having afforded me an opportunity to discuss with them regarding the various epizootic diseases. I offer my best thanks to the directors and other officers of all the Biological Institutes I visited on deputation, for having received me very kindly and explained to me at great length the technical working of the different sections of their Institutes. I am grateful to the following officers for having kindly arranged to send certain bacterial cultures etc., to this Institute during the year under report :—

1. Prof. Dr. Miessuer, Tierurzttiche Hochschule, Hannover, Misburgedaum 16.
2. The Principal, Veterinary College, Madras.
3. The Director, Imperial Institute of Veterinary Research, Muktesar.
4. Dr. Zeissler, Stadtsches Krankhenhan's, Altona Elbe, Hamburg, Germany.
5. Prof. Dr. R. Mulla, Kolan—dindental, Glencle Strarse, 77.
6. The Director, Pasteur Institute, 25, Rue De Dr. Roux, Paris (France).
7. Hofrat Dr. Gerlack, Bundesamstalt fier, Tierschehenbekampfung, Modling, Vienna (Austria).
9. Pro. Dr. Bierbaum, Institute fiir Tierscuchentherapie, Universitat, Berlin, N. W. 7.
10. The Director, Veterinary Services, Ondersteport, South Africa.
11. The Director, Institute, Robert Rock.
12. Prof. Dr. Bitter, Benthern, O. S. Stadtl. Hygiensche Inst.

In concluding this report I feel it my pleasent duty to place on record my great appreciation of the valuable services of Mr. P. U. Nayar, as Bacteriological Assistant and also of the continued good work done througout the year by the staff of this Institute, executive as well as ministerial, with great zeal and loyalty.

S. D. ACHAR,

Superintendent,
Serum Institute.

APPENDIX I.—Statement showing the quantity of Rinderpest Bull Virus produced, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of virus used in the Institute including wastage etc.	Total	Stock of virus on the last day of the month
				Civil Veterinary Department	Outside the State			
	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.
July 1935	24	37	61	...	...	56	56	5
August ,, ...	5	48	53	...	...	39	39	14
September ,, ...	14	30	44	...	...	40	40	4
October ,, ...	4	49	53	...	...	36	36	17
November ,, ...	17	38	55	...	11	30	41	14
December ,, ...	14	27	41	3	1	26	30	11
January 1936	11	47	58	...	4	48	52	6
February ,, ...	6	45	51	...	1	34	35	16
March ,, ...	16	29	45	...	2	38	40	5
April ,, ...	5	21	26	...	...	26	26	...
May ,, ...	...	22	22	...	...	22	22	Nil
June ,, ...	Nil	30	30	...	...	30	30	...
For the year ...	24 ozs. or 600 c. c.	423 ozs. or 10,575 c. c.	447 ozs. or 11,175 c. c.	8 ozs. or 75 c. c. used at Birur.	19 ozs. or 475 c. c.	425 ozs. or 10,625 c. c.	447 ozs. or 11,175 c. c.	Nil.

APPENDIX II.—Statement showing the quantity of Rinderpest Goat Virus produced, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity used in the Institute including wastage etc.	Total	Stock of Goat Virus on the last day of the month
				Civil Veterinary Department	Outside the State			
	c. c.	c. c.	c. c.	c. c.	c. c.	c. c.	c. c.	c. c.
July 1935	405	1,440	1,845	...	60	1,485	1,545	300
August ,, ...	300	1,290	1,590	...	105	1,140	1,245	345
September ,, ...	345	1,440	1,785	270	240	780	1,290	495
October ,, ...	495	1,290	1,785	...	90	1,395	1,485	300
November ,, ...	300	960	1,260	60	15	1,035	1,110	150
December ,, ...	150	1,140	1,290	...	285	750	1,035	255
January 1936	255	1,035	1,290	75	60	990	1,125	165
February ,, ...	165	1,005	1,170	...	60	780	840	330
March ,, ...	330	1,425	1,755	...	45	1,380	1,425	330
April ,, ...	330	765	1,095	...	225	780	1,005	90
May ,, ...	90	1,335	1,425	765	...	555	1,320	105
June ,, ...	105	1,710	1,815	300	...	1,320	1,620	195
For the yea ...	405	14,835	15,240	1,470	1,185	12,390	15,045	195

APPENDIX III.—Statement showing the quantity of Anti-Rinderpest Serum produced, supplied and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of serum used in the Institute including wastage etc.	Total	Stock of Serum on the last day of the month
				Civil Veterinary Department	Outside the State			
	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.
July 1935	81,800	44,700	1,26,500	...	3,500	...	3,500	1,23,000
August ,, ...	1,23,000	...	1,23,000	200	31,000	...	31,200	91,800
September ,, ...	91,800	...	91,800	2,000	20,000	50	22,050	69,750
October ,, ...	69,750	...	69,750	...	12,000	200	12,200	57,550
November ,, ...	57,550	43,000	1,00,550	800	15,250	...	16,050	84,500
December ,, ...	84,500		84,500	150	25,250	...	25,400	59,100
January 1936	59,100	...	59,100	...	22,250	400	22,650	36,450
February ,, ...	36,450	...	36,450	..	2,250	...	2,250	34,200
March ,, ...	34,200	82,000	1,16,200	...	25,500	...	25,500	90,700
April ,, ...	90,700	...	90,700	...	1,000	...	1,000	89,700
May ,, ...	89,700	...	89,700	2,350	21,000	...	23,350	66,350
June ,, ...	66,350	...	66,350	1,000	11,000	...	12,000	54,350
For the year ...	81,800	1,69,700	2,51,500	6,500	1,90,000	650	1,97,150	

APPENDIX IV.—Statement showing the quantity of Anti-Hæmorrhagic Septicæmia Serum produced, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of Serum used in the Institute including wastage, etc.	Total	Stock of Serum on the last day of the month
				Civil Veterinary Department	Outside the State			
	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July 1935	1,02,520	...	1,02,520	5,600	13,940	...	19,540	82,980
August ,, ...	82,980	...	82,980	600	5,460	...	6,060	76,920
September ,, ...	76,920	...	76,920	6,440	5,620	...	12,060	64,860
October ,, ...	64,860	...	64,860	1,600	5,000	...	6,600	58,260
November ,, ...	58,260	...	58,260	...	10,000	...	10,000	48,260
December ,, ...	48,260	...	48,260	300	360	...	660	47,600
January 1936	47,600	9,760	57,360	...	...	...	...	57,360
February ,, ...	57,360	3,340	60,700	740	...	...	740	59,960
March ,, ...	59,960	...	59,960	220	...	...	220	59,740
April ,, ...	59,740	10,800	70,540	1,300	400	...	1,700	68,840
May ,, ...	68,840	...	68,840	1,000	5,160	...	6,160	62,680
June ,, ...	62,680	...	62,680	920	11,160	...	12,080	50,600
For the year ...	1,02,520	23,900	1,26,420	18,720	57,100	...	75,820	...

APPENDIX V.—Statement showing the quantity of Anti-Blackquarter Serum produced, issued, and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of Serum used in the Intsitute including wastage, etc.	Quantity used at Ajjampur	Total	Stock on hand on the last day of the month
				Civil Veterinary Department	Outside the State				
	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July 1935	68,340	..	68,340	...	60	...	60	140	68,200
August ,, ...	68,200	...	68,200	440	4,000	...	...	4,440	63,760
September ,, ...	63,760	...	63,760	1,320	...	...	...	1,320	62,440
October ,, ...	62,440	...	62,440	640	2,000	...	...	2,640	59,800
November ,, ...	59,800	...	59,800	320	...	...	...	320	59,480
December ,, ...	59,480	...	59,480	...	...	...	...	...	59,480
January 1936	59,480	...	59,480	40	...	...	...	40	59,440
February ,, ...	59,440	...	59,440	560	...	...	...	560	58,880
March ,, ...	58,880	...	58,880	780	360	...	...	1,140	57,740
April ,, ...	57,740	...	57,740	360	200	...	...	560	57,180
May ,, ...	57,180	...	57,180	820	4,400	...	...	5,220	51,960
June ,, ...	51,960	...	51,960	...	2,000	...	...	2,000	49,960
For the year ...	68,340	...	68,340	5,260	13,040	...	60	18,380	...

APPENDIX VI.—Statement showing the quantity of Anti-Anthrax Serum produced, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of Serum used in the Institute including wastage, etc.	Total	Stock of Serum on the last day of the month
				Civil Veterinary Department	Outside the State			
	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July 1935	23,000	...	23,000	1,980	...	...	1,980	21,020
August ,, ...	21,020	...	21,020	300	...	...	300	20,720
September ,, ...	20,720	...	20,720	1,020	20	60	1,100	19,620
October ,, ...	19,620	...	19,620	520	500	...	1,020	18,600
November ,, ...	18,600	...	18,600	360	...	...	360	18,240
December ,, ...	18,240	7,140	25,380	4,880	...	...	4,880	20,500
January 1936	20,500	19,220	39,720	440	...	...	440	39,280
February ,, ...	39,280	...	39,280	300	...	...	300	38,980
March ,, ...	38,980	...	38,980	5,340	...	...	5,340	33,640
April ,, ...	33,640	...	33,640	1,980	...	...	1,980	31,660
May ,, ...	31,660	...	31,660	4,600	...	...	4,600	27,060
June ,, ...	27,060	...	27,060	1,940	500	...	2,440	24,620
For the year ...	23,000	26,360	49,360	23,660	1,020	60	24,740	...

APPENDIX VII.—Statement showing the quantity of Anti-Fowl Cholera Serum produced, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of serum used in the Institute including wastage etc.	Total	Stock of Serum on the last day of the month
				Civil Veterinary Department	Outside the State			
	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.
July 1935	5,150	...	5,150	...	...	...	...	5,150
August ,, ...	5,150	...	5,150	50	...	...	50	5,100
September ,, ...	5,100	...	5,100	100	...	75	175	4,925
October ,, ...	4,925	..	4,925	...	...	...	...	4,925
November ,, ...	4,925	...	4,925	...	...	25	25	4,900
December ,, ...	4,900	...	4,900	...	...	25	25	4,875
January 1936	4,875	2,050	6,925	...	...	50	50	6,875
February ,, ...	6,875	...	6,875	..	...	...	...	6,875
March ,, ...	6,875	...	6,875	50	75	25	150	6,725
April ,, ...	6,725	...	6,725	...	...	...	...	6,725
May ,, ...	6,725	...	6,725	250	...	...	250	6,475
June ,, ...	6,475	..	6,475	350	50	25	425	6,050
For the year ...	5,150	2,050	7,200	800	125	225	1,150	...

APPENDIX VIII.—Statement showing the quantity of Hæmorrhagic Septicæmia Vaccine prepared, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of Vaccine used in the Institute including wastage, etc.	Total	Stock of Vaccine on the last day of the month
				Civil Veterinary Department	Outside the State			
	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.
July 1935	12,600	24,250	36,850	14,500	12,000	...	26,500	1,0350
August ,, ...	10,350	16,000	26,350	6 100	8.000	...	14,100	12.250
September ,, ...	12,250	13,000	25,250	18,250	6,000	200	24.450	800
October ,, ...	800	11,150	11,950	4,550	...	...	4,550	7,400
November ,, ...	7,400	11,300	18,700	1,400	10,000	...	11,400	7,300
December ,, ...	7,300	...	7,300	800	...	...	800	6,500
January 1936	6,500	...	6,500	200	500	...	700	5,800
February ,, ...	5,800	...	5,800	250	...	...	250	5,550
March ,, ...	5,550	15,100	20,650	2,650	...	...	2,630	8,000
April ,, ...	18,000	...	18,000	3,050	100	...	3.150	14,850
May ,, ...	14,850	...	14,850	7,900	...	...	7,600	17,050
June ,, ...	7,050	12,300	19,350	3,400	8,500	...	11,900	7,450
For the year ...	12,600	1,03,100	1,15,700	62,950	45,100	200	1,08,250	...

APPENDIX IX.—Statement showing the quantity of Blackquarter Filtrate prepared, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of Filtrate used in the Institute including wastage etc.	Total	Stock of Filtrate on the last day of the month
				Civil Veterinary Dedartment	Outside the State			
	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.	Doses.
July 1935	6,800	...	6,800	...	...	...	...	6,800
August ,, ...	6,800	10,400	17,200	...	4,000	...	4,000	13,200
September ,, ...	13,200	...	13,200	...	...	...	...	13,200
October ,, ...	13,200	...	13,200	...	1,000	...	1,000	12,200
November ,, ...	12,200	...	12,200	...	...	...	...	12,200
December ,, ...	12,200	...	12,200	...	...	...	...	12 200
January 1936	12,200	...	12,200	...	...	...	...	12,200
February ,, ...	12,200	...	12,200	...	...	...	...	12,200
March ,, ...	12,200	...	12,200	...	350	...	350	11,850
April ,, ...	11,850	...	11,850	...	...	...	...	11,850
May ,, ...	11,850	...	11,850	...	2,000	...	2,000	9,850
June ,, ...	9,850	...	9,850	...	...	..	...	9,850
For the year ...	6,800	10,400	17,200	...	7,350	...	7,350	...

APPENDIX X.—Statement showing the quantity of Blackquarter Bacterin prepared, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of Bacterin used in the institute including wastage	Quantity used at Ajjampur	Total	Stock of Bacterin on the last day of the month
				Civil Veterinary Department	Outside the State				
	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July 1935	29,250	4,500	33,750	3,700	...	...	250	3,950	29,800
August ,, ...	29,800	...	29,800	3,550	...	...	...	3,650	25,950
September ,, ...	25,950	...	25,950	12,450	...	...	...	12,450	13,500
October ,, ...	13,500	...	13,500	7,300	...	...	200	7,500	6,000
November ,, ...	6,000	5,900	11,900	3,650	...	50	...	3,900	8,000
December ,, ...	8,000	...	8,000	300	...	...	...	300	7,700
January 1936	7,700	6,200	13,900	1,900	...	50	...	1,950	11,950
February ,, ...	11,950	...	11,950	6,850	...	...	...	6,850	5,100
March ,, ...	5,100	15,400	20,500	6,400	...	50	...	6,450	14,050
April ,, ...	14,050	...	14,050	6,600	200	...	...	6,800	7,250
May ,, ...	7,250	18,000	25,250	12,850	400	50	...	13,300	11,950
June ,, ...	11,950	23,900	35,850	17,550	...	...	250	17,800	18,050
For the year ...	29,250	73,900	1,03,150	83,600	600	200	700	85,100	...

APPENDIX XI.—Statement showing the quantity of Sheep-pox Vaccine prepared, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of Vaccine used in the Institute including wastage, etc.	Quantity used at Doddballapur	Total	Stock of Vaccine on the last day of the month
				Civil Veterinary Department	Outside the State				
	c. c.	c. c.	c. c.	c. c.	c. c.	c. c.	c. c.	c. c.	c. c
July 1935	42·600	...	42·600	10·00	...	...	...	10·00	32·600
August ,, ...	32·600	68·500	101·100	15·00	...	...	...	15·00	86·100
September ,, ...	86·100	...	86·100	...	...	...	...	...	86·100
October ,, ...	86·100	...	86·100	14·00	...	1·000	...	15·00	71·100
November ,, ...	71·100	...	71·100	20·50	...	...	...	20·50	50·600
December ,, ...	50·600	...	50·600	39·00	...	...	...	39·00	11·600
January 1936	11·600	46·400	58·000	46·50	...	...	...	46·50	11·500
February ,, ...	11·500	93·830	105·330	80·50	...	...	...	80·50	24·830
March ,, ...	24·830	65·500	90·330	79·00	...	...	...	79·00	11·330
April ,, ...	11·330	70·500	81·830	59·00	...	...	...	59·00	22·830
May ,, ...	22·830	78·000	100·830	58·00	...	·830	5·000	63·88	37·000
June ,, ...	37·000	64·000	101·000	72·00	4·00	...	...	76·00	25·000
For the year ...	42·600	486·730	529·330	493·59	4·000	1 830	5·000	504·33	...

APPENDIX XII.—Statement showing the quantity of Fowl Cholera Vaccine produced, issued and balance remaining monthly for the year 1935-36.

Month	Balance at the beginning of the month	Quantity produced during the month	Total	Quantity supplied to		Quantity of Vaccine used in the Institute including wastage, etc.	Total	Stock of Vaccine on the last day of the month
				Civil Veterinary Department	Outside the State			
	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
July 1935	2,100	...	2,100	200	...	...	200	1,900
August ,, ...	1,900	...	1,900	50	...	...	50	1,850
September ,, ...	1,850	...	1,850	...	...	150	150	1,700
October ,, ...	1,700	...	1,700	...	...	...	...	1,700
November ,, ...	1,700	...	1,700	...	...	50	50	1,650
December ,, ...	1,650	6,200	7,850	...	...	...	...	7,850
January 1936	7,850	...	7,850	250	...	...	250	7,600
February ,, ...	7,600	...	7,600	...	...	...	...	7,600
March ,, ...	7,600	...	7,600	...	50	...	50	7,550
April ,, ...	7,550	...	7,550	50	150	...	200	7,350
May ,, ...	7,350	...	7,350	250	200	...	450	6,900
June ,, ...	6,900	...	6,900	900	200	...	1,100	5,800
For the year ...	2,100	6,200	8,300	1,700	600	200	2,500	...

APPENDIX XIII.

Statement showing the quantities of Sera and other products, supplied and balance remaining during the year 1935-36.

Name of product	Opening balance	Quantity produced	Total	Quantity supplied to		Quantity used in the Institute including wastage, etc.	Total	Stock on hand on 1st July 1936
				Civil Veterinary Department	Outside the State			
	Doses	Doses	Doses	Doses	Doses	Doses	Doses	Doses
1. Anti Rinderpest Serum ...	81,800	1,69,700	2,51,500	6,500	1,90,000	650	1,97,150	54,350
2. Anti-Hæmorrhagic Sepicæmia Serum.	1,02,520	23,900	1,26,420	18.720	57,100	...	75,820	50,600
3. Anti Black-quarter Serum ...	68,340	...	68,340	5,280	13,040	60 at Ajjampur	18,380	49,960
4. ,, Anthrax Serum ...	23,000	26,360	49,360	23,660	1,020	60	24,740	24,620
5. Hæmorrhagic Septicæmia Vaccine.	12,600	1,03,100	1,15,700	62,950	45,100	200	1,08,250	7,450
6. Black-quarter Bacterin ...	29,250	73,900	1,03,150	83,600	660	200 & 700 at Ajjampur	85,100	18,050
7. Black-quarter Filtrate ...	6,800	10,400	17,200	...	7,350	...	7,350	9,850
8. Sheep-pox Vaccine ...	42·600	486·730	529·330	498·50	4·000	1·830 & 5·0 at Doddaballapur.	504·330	25,000
9. Rinderpest virus (bull virus) ...	24 ozs. or 600 cc.	423 ozs. or 10575 cc.	447 ozs. or 11175 cc.	3 ozs. 75 cc. used at Birur	19 ozs. or 475 cc.	425 ozs. or 10625 cc.	447 ozs. or 11175 cc.	...
10. Rinderpest Virus (Goat virus)	405 cc.	14,835 cc.	15,240 cc.	1470 cc.	1185 cc.	12390 cc	15045 cc.	195 cc.
11. Anti Fowl Cholera Serum ...	5150	2050	7200	800	125	225	1150	6050
12. Fowl Cholera Vaccine ...	2100	6200	8300	1700	600	200	2500	5800

APPENDIX XIV.

Statement showing the products supplied to different Provinces, States, etc., during the year 1935-36.

Name of Product	Mysore	Hyderabad	Coorg	Baroda	Ichalkaranji	Trichur Cochin	Pudukottai	Bombay	Ramdurg	Kalol N. Gujarat	Naurajkot Via Damnagar	Civil and Military Station Bangalore	Used at Ajjampur, and Institute	Colombo	Total
	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses	doses
Anti-Rinderpest Serum ...	6,500	1,65,000	5,000	12,000	...	...	...	4,500	8,300	100	100	...	650	...	1,97,150
Anti-Hæmorrhagic Septicæmia Serum...	18,720	53,000	...	1,400	40	1,940	100	920	...	...	...	300	...	...	75,820
Anti-Blackquarter Serum ...	5,280	12,000	...	...	80	...	960	...	...	...	...	...	60 at Ajjampur	...	18,380
Anti-anthrax Serum ...	23,660	1,000	...	...	...	20	...	...	...	...	...	...	60	...	24,740
Hæmorrhagic Septicæmia Vaccine ...	62,950	39,000	...	6,000	...	...	100	...	...	...	...	...	200	...	1,08,250
Black-quarter Bacterin ...	83,600	...	...	...	...	...	600	...	...	...	...	...	700	...	85,100
Black-quarter filtrate ...	...	7,000	...	...	...	...	350	...	...	...	...	...	at Ajjampur 200 ...	...	7,350
Sheep-pox Vaccine ...	493·50	...	...	...	...	...	4·00	...	...	...	...	...	1·830	...	504·330
Rinderpest Virus (Bovine) ...	3 ozs. 75 cc. used at Birur	...	13 ozs. or 325 cc.	...	...	...	...	...	6 ozs. or 150 cc.	...	...	...	5·000 at Dodballapur 32 ozs. or 800 cc.	...	54 ozs. or 1350 cc.
Do (Goat) ...	1470 cc.	...	980 cc.	80 cc.	...	...	...	...	225 cc.	...	...	...	150 cc.	...	2805 cc.
Anti-Fowl Cholera Serum ...	800	...	50	...	...	50	...	...	...	...	...	...	...	25	925
Fowl Cholera Vaccine ...	1700	...	550	...	...	50	...	...	...	...	...	...	...	...	2300

APPENDIX XV.

Statement showing the details of supplies made for the first time during 1935-36.

	Place.	*Name of product supplied for the first time during the year and the quantities supplied.*
1.	Baroda	1,400 doses of Anti-Hæmorrhagic Septicæmia Serum. 30 c. c. Goat Virus.
2.	Pudukottai	100 doses of Anti-Hæmorrhagic Septicæmia Serum. 100 doses of Hæmorrhagic Septicæmia Vaccine.
3.	Coorg	50 doses of Anti-Fowl Cholera Serum. 550 doses of Fowl Cholera Vaccine.
4.	Cochin	50 doses of Anti-Fowl Cholera Serum. 50 doses of Fowl Cholera Vaccine.
5.	Ramdurg (New customer) ...	3,300 doses of Anti-Rinderpest Serum. 6 ozs. Rinderpest Virus (Bovine). 225 c. c. of Goat Virus.
6.	Mr. K. R. S. Iyer, Lecturer, Veterinary College, Bombay (New customer).	4,500 doses Anti-Rinderpest Serum. 320 doses of Anti-Hæmorrhagic Septicæmia Serum.
7.	Mr. K. R. Patel, Kalol, North Gujarat, (New customer).	100 doses of Anti-Rinderpest Serum.
8.	Mr. Khanji Bai of Nanrajkot (New customer).	100 doses of Anti-Rinderpest Serum.
9.	Colombo (New customer) ...	25 doses of Anti-Fowl Cholera Serum.
10.	Trivandrum (New customer)	... 1,200 doses of Urine Harmone.

APPENDIX XVI.

Statement of Revenue and Expenditure of the Serum Institute for the year 1935-36.

Revenue					Expenditure						
Sale of done animals	Sale of manure, etc.	Sale of Sera and Vaccines to: Within the State	Sale of Sera and Vaccines to: Outside the State	Total	Salaries	Establishment	Travelling allowance	Purchase of animals for Serum Virus production	Feeding charges	Apparatus, chemicals and glassware	Contingencies	Total
Rs. a. p.												
1,852 0 0	77 3 8	39,208 11 0	33,759 2 0	74,897 0 8	7,049 8 0	33,318 7 0	1,764 11 0	5,538 14 0	9,276 7 11	11,002 12 0	6,948 11 1	74,896 7 0

APPENDIX XVII.

Table showing the results of smears examined during the year 1935-36.

Disease suspected	Number of smears			Total
	Positive	Doubtful	Negative	
Anthrax	31	3	5	39
Blackquarter	182	23	46	251
Hæmorrhagic Septicæmia	198	22	72	292
Pasteurella aviseptieus	201	7	79	287
Theilaria mutans	118	...	301	419
Post mortem smears of Baci. Nearogen group	312	63	115	490
Total	...	...	...	1,778

APPENDIX XVIII.

Price list of Biological products prepared in the Mysore Serum Institute, Hebbal, Bangalore.

	Name of product	*Total contents in a bottle*	*Unit dose for charging*	*Cost per unit due* Rs. a. p.	
1.	Anti-Rinderpest Serum	250 c. c. or 50 doses	5 c. c.	0 1 6	
2.	Anti-Blackquarter Serum	300 c. c. or 20 doses	15 c. c.	0 4 0	
3.	Anti-Hæmorrhagic Septicæmia Serum ...	do	15 c. c.	0 4 0	
4.	Anti-Anthrax Serum	do	15 c. c.	0 4 0	
5.	Hæmorrhagic Septicæmia vaccine ...	250 c. c. or 50 doses	5 c. c.	0 2 0	
6.	Black-quarter Filtrate	do	do	0 3 6	
7.	Black-quarter Bacterin	do	do	0 3 6	
8.	Sheep-pox Vaccine (supplied in ampoules).	100 doses in 1 ampoule	1 c. c. or 100 doses	0 6 0	per 100 doses.
9.	Rinderpest Bovine Virus (supplied in 1 oz. and 2 oz. bottles).	25 c. c. or 25 doses	1 c. c.	0 1 0	
10	Rinderpest Goat Virus (Supplied in 1 oz. bottle).	15 c. c. in one oz. bottle	15 c. c.	3 8 0	per 15 c. c.
11.	Anti-Fowl Cholera Serum	50 c. c. in two oz. bots. supplied free of charge at present			
12.	Fowl Cholera Vaccine				

1. The above products are supplied on indents received from qualified Veterinarians or from Government Officers.

2. The minimum quantity of each product that can be supplied at a time is one bottle as noted in column.

3. Those rates are for free delivery at the Institute premises and are inclusive of the cost of packing cases and bottles. Cart hire is charged at Rs. 1-8-0 per cart per trip when arranging for despatch of the consignments by railway parcel.

4. Credit is allowed to the customers for the empties returned at Re. 0-12-0 per undamaged standard big case and at one anna for each standard half pint bottle.

5. The Institute cannot be held responsible for any breakage or losses in transit.

6. Indents received from Veterinarians other than Government Officers will be complied with by V. P. P.

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Telegraphic Address
"Agri., Bangalore."

DEPARTMENT OF AGRICULTURE,

MYSORE STATE.

No. Roc.500/36-37/Hc.157.

OFFICE OF THE DIRECTOR OF AGRICULTURE,

Bangalore, 30th July *1937.*

CV 33-36-4

FROM

T. G. RAMA IYER, ESQ., B.A.,
DIRECTOR OF AGRICULTURE IN MYSORE,
BANGALORE.

To

M. Venkatanaranappa, Esq., B.A.,
Secretary to the Government of H.H.
the Maharaja of Mysore, Dev. Department,
B a n g a l o r e .

SIR,

With reference to para 3 of Government Order No.D.4553-55/C.V.33-36-3 dated 11/18th January 1937 re: the expenditure of Rs.11,000/- under "Apparatus, Chemicals and Glassware" in the budget of the Mysore Serum Institute during the year 1935-36 as compared with an expenditure of Rs.3,000/- under the head during the previous year, I have the honour to state that this difference in the level of expenditure is due to an outlay to the extent of Rs.4,400/- pertaining to the indents of the year 1934-35 having been carried over to the next year due to non-receipt of the relative consignments in time before the close of the year.

As regards revenue, I may state that the prospect of improvement depends largely on outbreaks of contageous diseases both within and outside the State. During the year 1936-37, there has been an increase to the extent of about Rs.34,000/- in revenue as compared with realisations of the previous year.

In regard to economising expenditure, necessary instructions have been issued to the Superintendent, Serum Institute.

I have the honour to be,
Sir,
Your most obedient servant,

Director of Agriculture.

kvs.